

1983

Virginia Commonwealth University Medical College of Virginia Bulletin

Virginia Commonwealth University

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1983-84
MEDICAL
COLLEGE
OF VIRGINIA
BULLETIN

Virginia Commonwealth University
Richmond, Virginia



**Virginia Commonwealth University
Medical College of Virginia Bulletin**

1983-84



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The Board of Visitors, the administration, and the faculty of Virginia Commonwealth University are committed to a policy of equal opportunity in education without regard to race, creed, sex, national origin, age, or physical handicap.

LIMITATIONS ON BULLETIN PROVISIONS

All rules and regulations set forth in this bulletin will apply until further notice. The university reserves the right to make changes in courses of study, fees, rules, and regulations governing the conduct of the work in all schools and programs, faculty and staff, and classification of students whenever university authorities deem it expedient or wise to do so.

1983–1985 MCV Campus Calendar

FALL 1983

July

- 8 —Last day for summer degree candidates to submit graduation applications to deans' offices for August degrees

August

- 12 —Summer sessions end
20 —Official date of August diploma
22–24 —Orientation and registration
25 —Classes begin at 8 am, MCV Campus
29 —Classes begin at 8 am, Academic Campus

September

- 5 —Labor Day holiday
23 —Last day for fall degree candidates to submit graduation applications to deans' offices for December degrees

October

- 21 —Last day to drop a course with a grade of "W"

November

- 23 —Thanksgiving holiday begins at 5 pm
28 —Thanksgiving holiday ends at 8 am

December

- 9 —Last day of classes for fall semester, both campuses
12–16 —Fall semester final examinations, MCV Campus
20 —Christmas vacation begins at 5 pm
26 —Official date of December diploma

SPRING 1984

January

- 5 —Orientation and registration for new students
- 9 —Classes begin at 8 am, MCV Campus and Academic Campus
- 20 —Last day for spring degree candidates to submit graduation applications to deans' offices for May degrees

February

- 27 —Summer advance registration begins

March

- 2 —Last day to drop a course with a grade of "W"
- 3 —Spring vacation begins at noon
- 12 —Spring vacation ends at 8 am
- 23 —Advance registration for continuing students for fall semester

April

- 24 —Last day of classes for spring semester, Academic Campus
- 25 —Study day, Academic Campus
- 26-May 6 —Spring semester final examinations, Academic Campus
- 27 —Last day of classes for spring semester, MCV Campus
- 30-May 4 —Spring semester final examinations, MCV Campus

May

- 12 —Commencement
- 14 —Summer sessions begin

FALL 1984

August

- 20-22 —Orientation and registration
- 23 —Classes begin at 8 am, MCV Campus
- 27 —Classes begin at 8 am, Academic Campus

September

- 3 —Labor Day holiday

November

- 21 —Thanksgiving holiday begins at 5 pm, MCV Campus and Academic Campus
- 26 —Thanksgiving holiday ends at 8 am

December

- 7 —Last day of classes for fall semester, both campuses
- 10-14 —Fall semester final examinations, MCV Campus
- 10-18 —Fall semester final examinations, Academic Campus
- 18 —Christmas vacation begins at 5 pm

SPRING 1985

January

- 10 —Orientation and registration for new students
- 14 —Classes begin at 8 am, MCV Campus and Academic Campus

March

- 9 —Spring vacation begins at noon, both campuses
 18 —Spring vacation ends at 8 am

April

- 30 —Last day of classes for spring semester, Academic Campus

May

- 3 —Last day of classes for spring semester, MCV Campus
 2-10 —Spring semester final examinations, Academic Campus
 6-10 —Spring semester final examinations, MCV Campus
 18 —Commencement
 20 —Summer sessions begin

Note: All of the above dates do not apply uniformly to all programs on the MCV Campus. Students will be advised of departures from this calendar by their respective deans or program directors and should follow schedules as provided by them. This calendar is subject to change.

1983

JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S
1 2	1 2 3 4 5 6	1 2 3	1	1 2 3 4 5	1 2 3
3 4 5 6 7 8 9	7 8 9 10 11 12 13	4 5 6 7 8 9 10	2 3 4 5 6 7 8	6 7 8 9 10 11 12	4 5 6 7 8 9 10
10 11 12 13 14 15 16	14 15 16 17 18 19 20	11 12 13 14 15 16 17	9 10 11 12 13 14 15	13 14 15 16 17 18 19	11 12 13 14 15 16 17
17 18 19 20 21 22 23	21 22 23 24 25 26 27	18 19 20 21 22 23 24	16 17 18 19 20 21 22	20 21 22 23 24 25 26	18 19 20 21 22 23 24
24 25 26 27 28 29 30 31	28 29 30 31	25 26 27 28 29 30	23 24 25 26 27 28 29 30 31	27 28 29 30	25 26 27 28 29 30 31

1984

JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S
1 2 3 4 5 6 7	1 2 3 4	1 2 3	1 2 3 4 5 6 7	1 2 3 4 5	1 2
8 9 10 11 12 13 14	5 6 7 8 9 10 11	4 5 6 7 8 9 10	8 9 10 11 12 13 14	6 7 8 9 10 11 12	3 4 5 6 7 8 9
15 16 17 18 19 20 21	12 13 14 15 16 17 18	11 12 13 14 15 16 17	15 16 17 18 19 20 21	13 14 15 16 17 18 19	10 11 12 13 14 15 16
22 23 24 25 26 27 28	19 20 21 22 23 24 25	18 19 20 21 22 23 24	22 23 24 25 26 27 28	20 21 22 23 24 25 26	17 18 19 20 21 22 23
29 30 31	26 27 28 29	25 26 27 28 29 30 31	29 30	27 28 29 30 31	24 25 26 27 28 29 30

JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S
1 2 3 4 5 6 7	1 2 3 4	1	1 2 3 4 5 6	1 2 3	1
8 9 10 11 12 13 14	5 6 7 8 9 10 11	2 3 4 5 6 7 8	7 8 9 10 11 12 13	4 5 6 7 8 9 10	2 3 4 5 6 7 8
15 16 17 18 19 20 21	12 13 14 15 16 17 18	9 10 11 12 13 14 15	14 15 16 17 18 19 20	11 12 13 14 15 16 17	9 10 11 12 13 14 15
22 23 24 25 26 27 28	19 20 21 22 23 24 25	16 17 18 19 20 21 22	21 22 23 24 25 26 27	18 19 20 21 22 23 24	16 17 18 19 20 21 22
29 30 31	26 27 28 29 30 31	23 24 25 26 27 28 29 30	28 29 30 31	25 26 27 28 29 30	23 24 25 26 27 28 29 30 31

1985

JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S
1 2 3 4 5	1 2	1 2	1 2 3 4 5 6	1 2 3 4	1
6 7 8 9 10 11 12	3 4 5 6 7 8 9	3 4 5 6 7 8 9	7 8 9 10 11 12 13	5 6 7 8 9 10 11	2 3 4 5 6 7 8
13 14 15 16 17 18 19	10 11 12 13 14 15 16	10 11 12 13 14 15 16	14 15 16 17 18 19 20	12 13 14 15 16 17 18	9 10 11 12 13 14 15
20 21 22 23 24 25 26	17 18 19 20 21 22 23	17 18 19 20 21 22 23	21 22 23 24 25 26 27	19 20 21 22 23 24 25	16 17 18 19 20 21 22
27 28 29 30 31	24 25 26 27 28	24 25 26 27 28 29 30 31	28 29 30	26 27 28 29 30 31	23 24 25 26 27 28 29 30



PART I—General Information

HISTORY

The Medical College of Virginia of Virginia Commonwealth University was founded on December 1, 1837, when the president and trustees of Hampden-Sydney College created a medical department in Richmond. This medical department became the Medical College of Virginia (MCV), an independent institution, in 1854. In 1860, when the Commonwealth of Virginia appropriated \$30,000 for MCV's first hospital, Old Dominion Hospital, MCV became a state-supported institution.

The first outpatient clinic was established in 1867.

In 1893 a second medical college, the College of Physicians and Surgeons, was established just two blocks from the Egyptian Building, MCV's oldest building. In 1894 its name was changed to the University College of Medicine. This college and MCV were consolidated in 1913.

MCV today consists of the Schools of Allied Health Professions, Basic Sciences, Dentistry, Medicine, Nursing, and Pharmacy. The MCV/VCU Cancer Center was added in 1974.

On July 1, 1968 the Medical College of Virginia became the Health Sciences Division of Virginia Commonwealth University which was created by the General Assembly of Virginia during its 1968 session.

The other component of Virginia Commonwealth University, known as the

Academic Campus, was the former Richmond Professional Institute (RPI). RPI began in September 1917 as the Richmond School of Social Work and Public Health under the leadership of Dr. Henry H. Hibbs.

The Academic Campus is comprised of the College of Humanities and Sciences and the Schools of the Arts, Business, Community and Public Affairs, Education, and Social Work.

The total university enrollment is over 19,000 with more than 3,000 students, interns, residents, and postdoctoral fellows receiving education in the health sciences on the MCV Campus. Presently the MCV Hospitals are authorized to maintain a bed complement of approximately 1,050.

VCU ranks as a comprehensive doctoral-granting institution, one of only three Virginia schools to achieve this rank.

MISSION OF THE UNIVERSITY

Virginia Commonwealth University is a comprehensive, urban, public university whose mission is to provide a fertile and stimulating environment for teaching, learning, research, and service; to promote the pursuit of knowledge; and to disseminate professional skills. Characteristic of comprehensive universities, its thrust is toward the education of citizens who need the solid values and proven strengths of the past as well as knowledge of future alternatives in dealing with society's increasingly urban-

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influenced problems, whenever these problems may exist.

The university's mission includes the provision of

A scholarly climate which will inspire in the student a lifelong commitment to learning and service; which will develop in the student competence and motivation to work toward the realization of individual and community potentials; and which will set for the student an example of excellence.

An environment of educational excellence which values diversity and enables faculty to pursue their work in accordance with the highest standards and to serve as exemplary role models.

Educational services for the adjacent urban community through flexible scheduling and for adults and professionals in adjacent regions through continuing education programs.

Educational experiences away from the metropolis for selected programs so that graduates are prepared to serve the state in diverse locales.

Research and educational activities in all disciplines to develop and communicate new knowledge, to improve the quality of life, and to promote the best use and general understanding of human and environmental resources.

The recognition of the imaginative power of the arts and humanities in reflecting the problems and aspirations of society; and the providing of opportunities to emphasize the value of the arts and humanities for oneself and for society through public exhibitions and performances.

Comprehensive health care services which meet patient and community needs and which provide an optimal environment both for education and training of health care professionals and for innovative studies on improving health care delivery.

The establishment of the university as a planning and resource center which, drawing upon the unique resources of a major urban area, is devoted to the solution of problems confronting Virginia's communities; to the identification of emerging social needs; and to the planning required

for orderly future growth and development.

MCV CAMPUS MISSION

The Medical College of Virginia Campus is an integral part of Virginia Commonwealth University, a comprehensive urban-based public institution of higher education. The six academic schools and teaching hospitals of the Medical College of Virginia Campus exist primarily to serve the needs of the citizens of the state of Virginia for

- Transmittal of knowledge related to the health services
- Continuity in the supply of health manpower
- Accessibility to comprehensive and quality health care services
- Development and dissemination of new knowledge for the advancement of the health sciences.

Cognizant of the societal nature of these needs and its public trust, the Medical College of Virginia Campus is committed to serving these needs in the most effective and efficient manner possible.

Education

The Medical College of Virginia Campus is committed to educational programs directed toward providing graduates capable of meeting the state's health needs. Programs are dedicated to maintaining and updating competency of health professionals as well as preparing graduates to enter the health professions. Educational programs are supported by several academic disciplines, the teaching hospital, carefully selected off-campus health facilities, and an institutional commitment to effective teaching.

Service

The Medical College of Virginia Campus is committed to a comprehensive program of patient care: to demonstrate excellence in practice as a model for students; to provide a base for study designed to improve patient care; to meet needs of patients in its hospital's service area; and, to offer highly specialized services in clinical areas of demonstrated expertise.

Research

The Medical College of Virginia Campus is committed to research programs: to develop new knowledge from studies ranging from the molecular level through clinical procedures to health care delivery and outcomes; to model for students a spirit of inquiry and the application of the scientific process to patient care; and to focus interdisciplinary effort on problems amenable to the scientific approach.

ACCREDITATION

Virginia Commonwealth University is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools. All schools and courses at MCV/VCU are accredited by the agencies and organizations appropriate to the school or course concerned.

EDUCATIONAL PLANNING AND DEVELOPMENT PROGRAM

The MCV Educational Planning and Development Program (EPDP) assists educational units at MCV in defining their goals and, within the scope of available competence, in goal achievement. Activities directed toward this mission are many and varied.

Workshops are offered to faculty in areas of interest. Recent topics have included effective writing, developing and presenting lectures, course planning, constructing tests, etc. Individual consultation is provided to faculty as requested.

Several activities relate to evaluation. Included are the development and monitoring of a test analysis system and evaluation of specific programs.

EPDP collaborates with other units in developing long-term project areas focused on specific educational problems. Currently six EPDP faculty (sponsored group) are committed to project areas growing out of this kind of collaborative exploration. Areas included are student academic skill development, faculty development in family practice, cancer education program evaluation, management of medical student evaluation, recruiting and counseling of minority students, and research in patient education related to cardiovascular disease.

Collaboration, with other university groups in aggressively seeking outside funding of projects such as these is seen as an increasingly important activity.

In addition to the six sponsored group faculty mentioned above, three faculty (core group) with primary appointments in EPDP work with all MCV schools in a variety of areas. Six faculty (joint appointment group) have primary responsibility and funding outside of EPDP but participate actively in a reciprocal exchange of ideas and assistance with other EPDP faculty.

EPDP and the Center for Improving Teaching Effectiveness (CITE) on the Academic Campus share ideas and resources in developing workshops for faculty.

MCV/VCU CANCER CENTER

The MCV/VCU Cancer Center, established as a clearly-defined administrative entity in 1974, is the result of vigorous planning by MCV/VCU faculty and administration. In fulfilling its mission, the Cancer Center coordinates the efforts of all departments and schools in oncology-related activities. Research interests include immunology, macrophage, host resistance, biochemical pharmacology, gene regulation, and clinical studies. The center's shared laboratory facilities make specialized scientific techniques and services available to many investigators.

One objective of the center is the integration of basic and clinical oncology research with clinical cancer care to allow a rapid translation of new laboratory findings into improved care for the cancer patient. A second objective of the center is to become an effective demonstration center capable of offering multidisciplinary consultation services, educational programs, and specialized methods for diagnosis in the treatment of cancer, which are not generally available in the area. Another objective is to coordinate and enhance the oncology educational programs at the university.

In addition, the center develops strong community programs involving active participation by the public and practicing health professionals in the region.

To date, over 100 faculty from several schools of the university hold *joint appointments* with the center. Additional information may be obtained by writing the

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MCV/VCU Cancer Center, Virginia Commonwealth University, Box 37, MCV Station, Richmond, VA 23298, (804) 786-0448.

DIVISION OF CONTINUING STUDIES AND PUBLIC SERVICE

One of the major purposes of Virginia Commonwealth University is to provide continuing education opportunities for citizens throughout the state. Through the Division of Continuing Studies and Public Service, the university provides a variety of credit courses during the evening and off-campus, all of which are degree-applicable. In addition, numerous CEU or noncredit courses, workshops, institutes, and seminars ranging from cultural enrichment programs to specific professional topics are made available both on- and off-campus.

Through the evening and off-campus credit offerings, the university provides opportunities for many adults who, because of job or other responsibilities, would otherwise be unable to pursue courses of study in higher education. In order to extend its educational program to an even broader population, the university offers a Bachelor of General Studies degree, a nontraditional university program administered by the Division of Continuing Studies and Public Service. This division also administers the Master of Interdisciplinary Studies degree program.

A contractual agreement enables the university to maintain a Center for Continuing Education in the Holiday Inn/Downtown. Located at 301 West Franklin Street, it is about midway between the two VCU campuses. The center coordinates the availability and use of guest rooms, dining facilities, and conference space for participants in short programs offered by the various schools and departments in the university.

A majority of the offerings of the Division of Continuing Studies and Public Service are announced in the division's bulletin which is distributed twice each year through the local newspapers. Special courses and programs directed toward specific professional groups may be announced in appropriate journals and by direct mailings.

Further information may be obtained by writing to Virginia Commonwealth University, Division of Continuing Studies and Pub-

lic Service, 301 West Franklin Street, Richmond, VA 23220, (804) 786-0342.

LIBRARIES AND THEIR RESOURCES

University Library Services include the Tompkins-McCaw Library on the MCV Campus, the James Branch Cabell Library on the Academic Campus, and Outreach Services, and the University Media Production Center.

Public services provided by both libraries include information and reference services, computer-assisted literature searching, inter-library loan, library orientation, class reserve materials, special collections, and photocopying facilities. The Cabell Library serves as a partial depository library for United States government publications.

The comprehensive collections of the Tompkins-McCaw Library support the university's study and research needs in the health sciences. James Branch Cabell Library collections, which support faculty, graduate, and undergraduate study and research in the arts, humanities and sciences, business, community and public affairs, education, and social work, also include a significant amount of materials relevant to the health sciences.

The Outreach Services of the University Library Services provide television production and distribution services, audiovisual lecture support services, an extensive film library and five learned resource centers which house print and nonprint curriculum support materials.

The Learning Resource Centers on the MCV Campus provide classroom support for students in the Schools of Medicine, Dentistry, and Nursing, and MCV hospitals.

The University Media Production Center offers graphic art, medical and biological illustration, and photography production services to the university community.

SUPPORT SERVICES

Division of Animal Resources

Animal care and procurement are supervised by a veterinarian who serves as the director of the Division of Animal Resources. These facilities are inspected and approved by the American Association for Laboratory Animal Care which certifies that

care and treatment meet the most rigid standards. They are also regularly inspected by veterinarians from the U.S. Department of Agriculture.

Housing for small animals is available in quarters conveniently located near departments and at a large central holding area in Sanger Hall. There is also a 90-acre farm in Hanover County for large animals and for holding animals for long-term experiments or conditioning. A large laboratory, animal building, two barns, and a caretaker's cottage are located on this facility.

Central Biomedical Instrumentation Facility

Well-equipped mechanical and electronic shops for the construction and repair of mechanical and electronic instrumentation are located in Sanger Hall.

Biomedical Instrumentation Laboratory

Certain large and expensive instruments, which because of size and cost necessitate interdepartmental use, are available to all departments. Some of the equipment presently available includes scintillation counters, gamma counters, electron microscopes, rapid kinetics spectrophotometer, atomic absorption-emission spectrophotometer, and electron spin resonance equipment, gas chromatograph-mass spectrometer, nuclear magnetic resonance spectrometer, laser beam cell sorter, high pressure liquid chromatograph, integrated amino acid analyzer, and a densitometric photomicroscope.

University Computing and Information Resources—Academic Computing

The Department of Academic Computing provides staff support and facilities for faculty, staff, and students of the university in using computers for instruction, research, and certain community service activities. Individual consultation and scheduled short courses are available. Information is provided by a users' guide, miniguides, and a newsletter as well as other more permanent forms of documentation.

Computing hardware available for academic computing use includes an AM-DAHL 470 V/7, an HP-3000, and a VAX-11/780. Devices available for gaining access

to these computers include the usual CRTs, graphics terminals, card-readers, and optical scanners. Public access to terminals is available in several locations, including the B-3 level of Sanger Hall.

Academic Computing is part of the Department of Computing and Information Resources, which includes Administrative Data Processing and the Computer Center.

FACILITIES—ACADEMIC

Sanger Hall is located on East Marshall Street between Eleventh and Twelfth Streets and extends along Eleventh Street to Broad Street. Named in honor of Dr. William T. Sanger, third president of MCV, Sanger Hall houses the administrative offices of MCV/VCU, the teaching headquarters for the clinical medical faculty, and the basic science departments and research laboratories.

The **Nursing Education Building**, originally a dormitory for nurses, provides administrative offices and classrooms for the Schools of Nursing and Allied Health Professions.

Randolph-Minor Annex is a former church building which provides teaching facilities for the Departments of Health Administration and Medical Technology.

The **Egyptian Building**, designed by Thomas Stewart of Philadelphia, was the first building owned by MCV/VCU. Completed in 1845, it is considered one of the purest types of Egyptian architecture in the United States. Offices for continuing medical education, administrative offices of the School of Allied Health Professions, seminar rooms, and the Baruch Auditorium (with a seating capacity of about 300) are housed in this building located at the corner of College and East Marshall Streets.

McGuire Hall and **McGuire Annex** are named for Dr. Hunter Holmes McGuire, founder of the University College of Medicine which consolidated with MCV in 1913.

Located on the north side of Clay Street between Eleventh and Twelfth Streets, these adjoining buildings primarily serve the School of Pharmacy and the Department of Pharmacology.

The MCV branch of the **VCU Bookstore**

6 General Information

is located in the basement of McGuire Hall.

The **Wood Memorial Building** and the **Lyons Building**, named in honor of Dr. and Mrs. Jud B. Wood and Dr. Harry Lyons, dean of the School of Dentistry from 1951 until 1970, house the School of Dentistry and the administrative offices of the MCV/VCU Cancer Center. These adjoining buildings are located on Eleventh and Twelfth Streets respectively, just north of McGuire Hall.

The **Dooley Building**, opened as a pediatric hospital, has been converted to house research laboratories.

The **Lewis L. Strauss Surgical Research Laboratory** accommodates a number of important research projects of the Department of Microbiology. It is located next to the Tompkins-McCaw Library on North Twelfth Street.

The **Stephen and Samuel Putney Houses** are historic landmarks and have been restored to their original nineteenth-century designs. The Stephen Putney House located at 1012 East Marshall Street provides administrative offices for the vice-president for research, the School of Graduate Studies, the administrator of grants and contracts, and the Medical College of Virginia Foundation. The Samuel Putney House at 1010 East Marshall Street houses certain offices and activities of the Program in Gerontology and the Virginia Center on Aging.

The **VMI Building**, formerly the Virginia Mechanics Institute, is located at the corner of Tenth and Marshall Streets and houses a variety of activities and programs. Among these are the offices and laboratories of the Department of Occupational Therapy of the School of Allied Health Professionals, the Office of Continuing Medical Education, the Nurse Practitioner Programs, MCVH Social Work offices, MCVH Quality Assurance Program, MCV Campus Parking office, and certain offices of the MCV Campus Physical Plant Department. The campus post office is located on the ground floor of this building.

The four **residence halls**, located at Tenth and Leigh Streets, provide offices for student life and student services personnel in addition to living quarters for students. They are named **Warner Hall**, **Bear Hall**, **Rudd Hall**, **McRae Hall**.

Cabaniss Hall is a 432-bed dormitory located southwest of the Jonah L. Larrick Student Center.

The **Jonah L. Larrick Student Center** is named for the former director of YMCA activities at MCV. On the first floor are the cafeteria and a smaller dining room for special events. The second floor houses a large lounge and exhibit area with smaller rooms for TV viewing, music listening, piano playing, games and activities, offices, and meetings.

Adjacent to the student center is the **MCV Gymnasium** with extensive facilities for intramurals, recreation, and physical fitness.

The old **Student Union Building**, a former church, houses a printing facility, the Campus Room Restaurant, and Employee Health Service.

Monumental Church, erected in 1812 on the site of the theatre building that burned on the night of December 26, 1811, claiming the lives of 72 people, was deeded by its congregation to the MCV Foundation in 1965 "as a chapel or religious center for persons of all creeds, denominations, or faiths, and for the other purposes of the College." A major part of the restoration of the church to conform to the original design of the architect Robert Mills has been completed.

In addition to the major buildings, a number of smaller structures house various departments of the institution.

MEDICAL COLLEGE OF VIRGINIA HOSPITALS

The Medical College of Virginia Hospitals is one of the largest university-owned teaching hospitals in the nation, with a licensed capacity of 1,058 beds. While providing primary and secondary care to the Richmond metropolitan area, the Hospitals serves as a Level I Trauma Center and a tertiary care referral center for the Southeastern United States. Annual inpatient admissions approximate 30,000, and the emergency room has nearly 100,000 visits a year. The Hospitals also operates an extensive array of general and subspecialty clinics in which approximately 140,000 patient visits occur annually.

The patient care operations in the Hospitals and clinics provide the major

clinical resources and setting for the clinical teaching programs of the MCV Campus schools. This clinical exposure is further enhanced and diversified through an affiliation with the McGuire Veterans Administration Medical Center in Richmond, and several other hospitals in the Richmond area and throughout the state.

Patient care activities are conducted in seven buildings on the MCV Campus. The newly constructed Main Hospital accommodates more than half of the institution's beds and includes the operating and recovery rooms, the labor and delivery suite, the adult, pediatric and newborn intensive care units, the emergency departments, and the diagnostic radiology division. The balance of the institution's beds are located in West Hospital which includes the Clinical Transplant Center, the Clinical Research Center, and the burn unit. Most of the outpatient clinics are located in the A.D. Williams Clinic building and Randolph Minor Hall. Several clinics are also located in the Ambulatory Care Center, which provides ambulatory surgery and in Nelson Clinic where faculty practice offices are maintained. Radiation therapy services are provided in the MCV Cancer Center.

MCV Hospitals is beyond the half-way point in the replacement and modernization of its inpatient and support facilities. A three-floor addition to the Supply and Distribution Building for dietary and clinical laboratory activities is scheduled for completion during 1984. The currently vacant North Hospital will undergo a complete rehabilitation, including the addition of a new ten-story bed tower. These activities, financed through a revenue bond issue, will complete the modernization of the Hospitals' inpatient and support services environment. Plans are underway for an equally extensive upgrading of the ambulatory care facilities.

Endowment, Resources, Support, and Research

Although Virginia Commonwealth University is a state-aided institution, it is indebted to many friends for generous gifts and bequests that are vital to the successful

performance of its mission in education, service, and research.

While Virginia Commonwealth University is one of the leaders in teaching among the institutions of higher education in the state, it is also an institution which commits a significant portion of its resources to research and scholarly activities. VCU is fully committed to the proposition that a broad-based program of research investigations enhances the teaching mission of the university while, at the same time, it improves the quality of services provided to the community. During the fiscal year ending on June 30, 1982, the university received over \$28.7 million, of which more than \$23.7 million was received on the MCV Campus, in sponsored program support from a variety of federal agencies and private organizations. The extensive and diverse nature of the university's research programs are directly related to the excellence of the faculty on both campuses.

MCV FOUNDATION

The Medical College of Virginia Foundation was established as a not-for-profit corporation in 1949 with its express purpose being to aid, strengthen, and extend in every proper and useful manner, the work, service, and objectives of the Medical College of Virginia.

The MCV Foundation Board consists of 22 trustees, four honorary trustees, and three ex-officio members. Approximately one-half are medical and one-half are lay persons. The bylaws of the Foundation specify that the board must consist of at least three alumni of MCV, one member of the VCU Board of Visitors, and one faculty member from the MCV Campus.

The Foundation is tax-exempt under 501-C-3 of the IRS Code, and all lifetime gifts, as well as bequests, are tax-deductible to the extent allowed by law. It has been negotiated with the university administration that the foundation will direct its fund-raising efforts in the area of endowment, with emphasis on planned giving.

For the fiscal year 1982-83, the foundation provided over one million dollars from endowment income for support of programs in the MCV Campus schools and hospitals.

The foundation offices are located on the first floor of the Stephen Putney House at 1012 East Marshall Street. All correspondence should be mailed to the Executive Director, Box 234, MCV Station, Richmond, VA 23298.

A.D. WILLIAMS FUNDS

The estate of A.D. Williams, left in trust, provides an appreciable income each year to MCV. These funds are used in support of student scholarships, predoctoral fellowships (graduate students), summer student research fellowships, postdoctoral awards to visiting distinguished scholars, and faculty stipends to MCV faculty members advancing their training. A portion of these funds is also used for research grants to MCV faculty members. Funds made available from this trust are administered by a committee appointed by the vice-president for health sciences. Use of some of these funds is based upon the recommendations of the Institutional Research Advisory Committee.

A.D. WILLIAMS AWARD

An annual award may be made, on the nomination of the faculty, to a student in each class of the degree programs who demonstrates by virtue of high scholastic attainment and professional performance, unusual promise and ability.

ENDOWED PROFESSORSHIPS

Endowed professorships have been established in honor of these individuals who have played vital roles in the development of the Medical College of Virginia:

Arthur Graham Glasgow Professorship of Hospital Administration. This professorship was established in 1957 in honor of Doctor Glasgow, who provided so generously in his will for MCV, and who had shown such a vital interest in hospitals;

Stuart McGuire Professorship of Surgery. This professorship was established in 1959 in honor of Dr. Stuart McGuire, who was president of the University College of Medicine when it was consolidated with the Medical College of Virginia in 1913, and who was successively professor of surgery, dean, president, and chairman of the Board of Visitors of the combined institutions. Doctor McGuire died in 1948. His wife, Mrs.

Ruth Robertson McGuire, died in 1963. The bulk of their estates was bequeathed to MCV to be used for the Department of Surgery;

William Branch Porter Professorship of Medicine. This professorship was established in 1959 in honor of Doctor Porter, who was chairman of the Department of Medicine from 1927 to 1956 when illness forced his retirement. He died October 6, 1960, leaving his entire estate in trust for the MCV Foundation for use of the Department of Medicine;

Harvey B. and Gladys V. Haag Professorship of Pharmacology. Established in 1963, this professorship honors Dr. Harvey Bernhard Haag and his wife, Mrs. Gladys Vaden Haag. Doctor Haag, who died in 1961, joined the college faculty in 1923 and was promoted to professor and chairman of the Department of Pharmacology in 1933. He also served as dean of the School of Medicine from 1947 to 1951. At Mrs. Haag's death in 1962, the bulk of their joint estate came to the MCV Foundation for support of the Department of Pharmacology;

Norborne F. Muir Chair of Orthodontics. Established in 1974, this chair honors Dr. Norborne F. Muir who in his will generously provided a bequest to the MCV Foundation to establish a Chair of Orthodontics in the School of Dentistry. Doctor Muir, who died in 1974, graduated from the School of Dentistry of the Medical College of Virginia in 1918 and practiced dentistry all of his professional life in Roanoke, Virginia.

HONOR SOCIETIES

Students who excel in scholarship and leadership may be eligible for membership in honor societies related to their fields of study. In addition, students who meet established criteria may be elected to one or more of the following societies:

Phi Kappa Phi is a national honor society which recognizes and encourages superior scholarship. It accepts members from applied and professional fields of study, as well as from letters, arts, science, and humanities. The VCU chapter was installed in 1977.

Sigma Xi Society is a national honor society founded for the encouragement of research in science and recognizes individuals for research achievement or promise.

Alpha Sigma Chi is an MCV Campus organization which was founded in 1938. It recognizes those individuals who excel in leadership and service to colleagues, school, and the university.

Sigma Zeta is an honorary science fraternity which encourages and fosters knowledge of the sciences and recognizes attainment of high scholarship in the sciences. Gamma Chapter was installed at MCV in 1926.

Certificate Training Programs

Training programs in blood banking, cytotechnology, EEG technology, and a dietetic internship are available. Persons completing these programs receive certificates of training and may qualify to take appropriate certification examinations. Additional information for any of the above programs may be obtained by writing to the appropriate program director.

Blood Banking—Program Director, Blood Banking Program, Department of Pathology MCV/VCU, Box 662, MCV Station, Richmond, VA 23298.

Cytotechnology—Program Director, Cytotechnology Program, Department of Pathology MCV/VCU, Box 662, MCV Station, Richmond, VA 23298.

Electroencephalographic (EEG) Technology—Program Director, EEG Technology Program, Department of Neurology MCV/VCU, Box 599, MCV Station, Richmond, VA 23298.

The Dietetic Internship—Director of the Dietetic Internship, MCV Hospitals, VCU, Box 294, MCV Station, Richmond, VA 23298.

Student Life and Services

HOUSING FACILITIES

Dormitories with a capacity for 780 students are located in the northwest corner of the MCV campus.

Rooms are furnished with beds, mattresses, study desks, chairs, and either

chests-of-drawers or bureaus. Janitorial service is provided. The residence hall staff personally supervises all students.

Students and members of the housestaff may get assistance from the Housing Office in locating accommodations off campus.

Housing information and applications will be sent to all students as they are accepted for admission to MCV/VCU. Requests for additional housing information should be made to the Coordinator of University Housing, Virginia Commonwealth University, 915 West Franklin Street, Richmond, Virginia 23284.

Dormitory room assignments are made for the period of an academic year which normally is two semesters.

When students are required to remain beyond the usual year, rentals will be charged on a prorated monthly basis. Reservations are made in advance for the full period or for such part of the period as may be approved specifically by the Housing Office.

A current rate schedule is available upon request from the Housing Office. Rent is payable in advance by the semester and refunds will be made only in accordance with the university policy as stated in the university catalog and housing contract.

STUDENT CENTER

The Jonah L. Larrick Student Center is a unique circular building consisting of two levels:

Lower Level—Dining Facilities: A cafeteria provides food on a contractual basis for students living in the dormitories and for off-campus students who elect to be on the meal plan. This contract will provide three meals each day, *except Sundays, when two meals are served.* The contract covers only the days that the MCV Campus is officially open as shown by the calendar in this bulletin. Students may elect a weekly meal plan providing 15 or 20 meals per week. Students who remain after holidays and vacations begin, or who begin classes before the official dates shown, are able to purchase meals in one of the campus food facilities on an *a la carte* basis. A current contract price schedule is available upon request from the Office of the Comptroller or the Housing Office. This cafeteria is used on a limited

basis by faculty and staff when it does not conflict with the student schedule.

There is a small private dining room which may be reserved for private luncheons and dinner meetings. Arrangements to use this room, as well as for catering for social functions, are made through the manager of food services.

Upper Level—Activities Area: A variety of activities and social opportunities are offered to students through the Larrick Student Center. A large lounge in the center is surrounded by smaller rooms. The lounge area accommodates up to 350 people for dances, social mixers, lectures, etc. The walls are lighted and equipped for hanging art exhibits. The smaller rooms include offices of the student center manager, the MCV Student Government and Honor Council, the X-Ray (MCV yearbook), and two conference rooms which accommodate up to 50 people.

There are rooms for pool and table tennis, as well as cards, chess, piano playing, and record listening.

The Student Center Board, comprised of students, faculty, and administration, determines policies, procedures, and programs for the Larrick Student Center and helps to identify student interests and needs.

Reservations for use of the activities area should be made through the office of the Larrick Student Center manager.

HEALTH SERVICES

MCV/VCU offers a comprehensive program of prepaid medical care through the Student Health Service and a supplemental accident and sickness hospitalization insurance plan. Descriptive brochures are sent to each regularly-enrolled student prior to the start of the academic year.

The Student Health Service is supported by the comprehensive fee which is *required* of all regularly-enrolled full-time students in medicine, dentistry and dental hygiene, pharmacy, nursing, basic sciences, medical technology, radiation science, physical therapy, occupational therapy, health care management, health administration, nurse anesthesia, medical record administration, and nurse practitioner. A health service fee is *required of all students living in university dormitories and is included for full-time*

students in the university fee. On the MCV Campus, this also applies to special students, and students or trainees in nondegree programs such as cytotechnology, EEG technology, and blood banking. Part-time students carrying nine or more credit hours are eligible for care in the Student Health Service, but must pay the health fee within the first week of the term. A university-sponsored student accident and sickness hospitalization insurance plan supplements the benefits available under the Student Health Service and provides reasonable protection at moderate group rates against the high cost of hospitalization and treatment for serious illness and accident. The insurance plan is voluntary but is strongly recommended for all students who do not already have comparable coverage. Married students may enroll their spouses and dependent children. Part-time students carrying less than six credit hours who are not living in university dormitories are not eligible for the insurance plan. The Student Health Service does not cover referrals or emergency room visits for accidental injuries such as sprains and fractures.

Every new student and every student reentering after an absence of one year or more is required to have a pre-entrance physical examination. Health records, which are provided, must be properly completed and returned to the Student Health Service prior to the beginning of school. Any remediable defects should be corrected before entering the university.

New students currently are tested for rubella immunity and immunized if necessary. Students who are not covered by the Student Health Service and must be tested are charged for this service.

For further details see the Student Health Service brochure or contact the service at (804) 786-9212. Insurance brochures are available at the Student Health Service, MCV South Hospital, Room 107.

POSTAL SERVICE

All mail should be addressed to Virginia Commonwealth University, MCV Station, Richmond, Virginia, 23298. MCV Station, a contract branch of the United States Postal Service, is located in the VMI Building, 1000

East Marshall Street, and can handle the usual business conducted in an official post office. Window service is offered Monday through Friday from 8 am to 4 pm.

All dormitory residents have only dormitory mail boxes, and their mail should have the name of the dormitory and room number on it.

Students living off campus should have mail sent to their local addresses.

Students in some programs are assigned MCV post office boxes for the convenience of the university and are so notified by their respective schools.

A notary public is available at the post office during the afternoon hours.

THE STUDENT BODY ORGANIZATION

The student body organization on the MCV Campus was formed to promote college activities; to promote a concern among students for each other, and a greater identification with the university; to express a unified voice in matters which affect the best interests of the student body; and to foster a constructive relationship between the university and the community and state.

The student body on the MCV Campus operates through the Student Government Association (SGA). Representatives are elected from each class of the health science schools on the basis of one representative per 40 students.

SGA meetings are held monthly from September through April, except December, and are open to all MCV Campus students. In 1982-83, the SGA had an operating budget of more than \$50,000 through which the yearbook and numerous social activities were funded. The association sponsors blood drives, University Guest Day, and other community projects. It also subsidizes the purchase by students of season tickets for local cultural events. The SGA provides a forum for discussion of student ideas and suggestions and serves as a means for initiating innovative changes in campus life. In recent years, the SGA has addressed some issues with officials at the state and local levels as well as top university administrators.

HONOR CODE

The student body organization, believing

that self-government in college is fitting preparation for self-government in life following graduation, conducts its affairs by means of an honor system under which every student is assumed to be trustworthy and unwilling to do anything dishonest or dishonorable. The honor system was inaugurated by students during the academic year 1895-1896 and while procedures have been modified, the essential spirit of the system remains unchanged.

Any student failing to live up to the principles of the honor system by lying, cheating, or stealing is subject to punishment by the Honor Council which is elected by the student body. All students must support the Honor Code and report infringements thereon to their Honor Council representative. The following pledge applies to all examinations unless otherwise stated by the instructor: "On my honor, I have neither given nor received aid on this examination, quiz, or test." Each student, as a condition of matriculation at the MCV Campus of Virginia Commonwealth University, agrees in writing to abide by and uphold the Honor Code. A detailed description of the Honor Council's rules and procedures is available upon request to the Office of Student Government.

Students who are not enrolled in a formal program in one of the schools on the MCV Campus, but take courses on the MCV Campus are expected to abide by the Honor Code.

EXTRACURRICULAR ACTIVITIES

See information under **Student Center**.

MCV Campus Gymnasium and Intramurals

The gymnasium offers a full recreational program for students, housestaff, faculty, and employee gym members. Membership for all except MCV Campus students is on a fee basis. Membership information may be obtained through the director's office. The gym facilities include four basketball courts, three volleyball courts, two indoor tennis courts, four handball-racquetball courts, and two squash courts. Two weight rooms, an exercise room, a multipurpose room, a training room, and locker-shower rooms for men and women students and men and women faculty complete the facilities.

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Equipment may be checked out for basketball, volleyball, and racquetball. Special equipment for boxing, gymnastics, karate, exercise, and camping is also available.

MCV students and faculty may use the university swimming pool located in the Franklin Street Gymnasium on the Academic Campus. ID cards are required.

An extensive intramural program is offered to men and women students and housestaff. Team sports include flag football, basketball, coed two-person basketball, three-man basketball, men and women's volleyball, slow pitch softball, swimming, and track. Individual tournaments are held in tennis, handball, racketball, squash, table tennis, billiards, badminton, swimming, wrestling, one-on-one basketball, and basketball free-throw.

Club sports include rugby, soccer, tennis, karate, and fencing. Karate, self-defense classes, and aerobic exercise classes are held in the MCV Campus gymnasium. Various elective classes are offered for credit to men and women through the Department of Physical Education on the Academic Campus.

Religious Activities

All churches in Richmond welcome students. Monumental Church, located on the MCV Campus was designed by an early American architect, Robert Mills, and the building has been designated as a Virginia Historic Landmark and is listed in the National Register of Historic Places. It is used for special services and various group assemblies. It is available for use by faculty and student groups for a small custodial fee.

CULTURAL OPPORTUNITIES IN RICHMOND

The student affairs offices assist in planning extracurricular activities for the intellectual, cultural, religious, and recreational life of students.

The resources of the Virginia State Library as well as those of the Richmond Public Library, located a few blocks from both campuses, are available.

Near the MCV Campus is the Valentine Museum, with its excellent historical displays of early Richmond, and the White

House of the Confederacy with memorabilia of the Civil War.

Students have the opportunity to purchase season tickets to programs at the Virginia Museum of Fine Arts. These include chamber music, theatre, outstanding films of the past, and ballet, as well as fine art exhibits.

The Richmond Symphony and the Richmond Sinfonia are the recipients of enthusiastic support of music critics and the public alike.

Various dinner-theaters in the area, as well as the Performing Arts Center on the university's Academic Campus, provide delightful evening entertainment.

The 12,176-seat Richmond Coliseum, which serves as the home court of the university's basketball team, is located west of the MCV campus. The coliseum programs include sports events, spectaculars, circuses, musical groups, and various other stage events.

ALUMNI OF THE UNIVERSITY

Virginia Commonwealth University has more than 49,850 alumni of whom over 18,800 are graduates of MCV/VCU. These alumni live in each of the states and 49 foreign countries. The Alumni Activities Office coordinates alumni functions and serves as a resource center for those who studied here.

Through the annual fund, alumni are given the opportunity to support the various schools and departments in the university. Such support provides resources for innovation and the development of educational programs.

The Medical College of Virginia Alumni Association of Virginia Commonwealth University, organized March 28, 1889, has functioned continuously since that time. It was incorporated in 1943. The association is housed in the historic Maupin-Maury House at 1105 East Clay Street.

The university's Alumni Activities Office, in cooperation with the alumni associations keeps alumni informed about all aspects of the programs at MCV/VCU.

Inquiries about alumni activities should be addressed to the Alumni Activities Office, Virginia Commonwealth University, 828

West Franklin Street, Richmond, VA 23284, (804) 257-1227.

INTERNATIONAL STUDENTS AND VISITORS

The university subscribes to the intent and purpose of the Mutual Educational and Cultural Exchange Act, the regulations of which permit international students and visitors to become a part of the university community to pursue their objectives.

In order for the university to qualify with the United States government as a place of training for international students and visitors, the university is obligated to determine (a) that applicants have the necessary ability and educational backgrounds to benefit from their experiences at this institution; (b) that their proficiency in English is sufficient to carry a full program of study or training; and (c) that they have all the funds necessary for their expenses for the entire period of their stay without resorting to employment while in the United States. Normally the university has no financial resources for foreign students.

Foreign students who do not hold visas for permanent residence cannot qualify as residents of Virginia and must pay the nonresident tuition charges.

Once a foreign national has been admitted, he or she is treated as any other student except for the immigration and naturalization rules and regulations which take precedence over the university rules. The university cannot register a foreign national until the Immigration and Naturalization Service gives its official approval.

The university has a foreign student advisor on each campus who meets with all foreign students after their arrival, counsels and advises them in their adjustment to the university, and prepares the necessary government forms needed by foreign nationals to maintain correct visa status with the U.S. government.

Foreign students residing outside the United States should allow at least six months between application for admission and actual matriculation at the university.

Admission Regulations

The Medical College of Virginia of

Virginia Commonwealth University does not limit applications to residents of Virginia; however, priority is given to those who are legal residents. Candidates are considered without regard to race, creed, sex, or national origin. For detailed information regarding admission requirements and procedures, refer to the appropriate school sections of this bulletin.

MINORITY APPLICANTS

Applicants from minorities underrepresented in the health sciences are encouraged to contact the Office of the Health Careers Opportunity Program, Box 549, MCV Station, Richmond, VA 23298.

Tuition, Fees, and Expenses

The university reserves the right to revise or alter all fees, regulations pertaining to student fees, and fee collection procedures whenever such revisions or alterations are deemed necessary. Fees are not returnable except under most unusual circumstances and then only on the recommendation of the dean concerned. See Refunds and Rebates section of this bulletin.

All fees are due and payable in full at the MCV Student Accounting Office, 520 North Twelfth Street, Richmond, VA 23298, prior to or as of registration as required and stated in each semester's billing. Students registering pay the fees indicated in the following sections, plus special fees and deposits as required. Completion of arrangements with the Student Accounting Office for payment from accepted scholarships, loan funds, grants, or contracts shall be considered sufficient for acceptance of registration. Students are reminded, however, that they are ultimately responsible for repaying such loans in full according to the terms of the loan agreement.

Unless arranged through the school and the Office of University Enrollment Services, students failing to register during the regular registration periods are subject to a late registration fee of \$10.

No degree will be conferred upon any candidate prior to the payment of all tuition, fees, and other indebtedness to any school of the university.

APPLICATION FEE AND DEPOSITS

Application Fee: Except for the Schools of Medicine and Dentistry, each student applying for admission or readmission to the health sciences programs shall pay a \$20 nonrefundable application fee. Applicants to the School of Medicine and to the School of Dentistry pay a \$35 nonrefundable application fee. This fee shall accompany the application form sent to the Admissions Office.

Tuition Deposit: On being notified of his appointment to the entering class, the applicant may be required to pay a deposit, depending on the school, on tuition for the first year. This deposit is not refunded but is applicable to first semester tuition. The deposit is refunded, however, in the case of accepted candidates to the Schools of Medicine and Dentistry who withdraw prior to March 1 of the year of attendance. Authorization to matriculate constitutes an agreement for the reservation of a place in the class entering for the session cited.

Dormitory Security Deposit and Damage Fee: A \$50 dormitory deposit is required of each student completing an agreement for residence hall accommodations. This deposit *is not* applicable to the room and board charges, but remains on deposit to be applied toward possible room damage. As such, the deposit shall be returned, minus any damage charges, when the student terminates his connection with the university.

Dormitory security deposits that would otherwise be returned to the student will be applied against any financial obligation which the student may have outstanding in the Office of Student Accounting.

TUITION CHARGES PER STUDENT

The tuition charges shown on page 19 are for the academic year 1983-84. Tuition is determined both by the student's residency classification and by status as a full-time or part-time student. Educational costs are subject to similar price adjustments found in the cost of other commodities; therefore, fees may change for the academic year 1983-84.

Virginia Student Classification: Section 23-7 of the Code of Virginia which defines Virginia resident (domiciliary) for tuition purposes states in part, as follows:

"B. . . , no person in attendance at a State

institution of higher education shall be entitled to reduced tuition charges unless such person is and has been domiciled in Virginia for a period of at least one year immediately prior to the commencement of the term, semester or quarter for which any such reduced tuition charge is sought.

C. A person who enrolls in any such institution while not domiciled in Virginia does not become entitled to reduced tuition charges by mere presence or residence in Virginia. In order to become so entitled, any such person must establish that, one year before the date of alleged entitlement, he or she was at least eighteen years of age or, if under the age of eighteen, was an emancipated minor, and had abandoned his or her old domicile and was present in Virginia with the unqualified intention of remaining in Virginia for the period immediately after leaving such institution and indefinitely thereafter. . . .

F. Entitlement to reduced tuition charges must be established by convincing evidence and the burden of establishing entitlement shall be on the person claiming such entitlement."

Students must apply to the Office of University Enrollment Services for Virginia residency status through forms available from that office. Residency decisions will be rendered for the semester in which the application is submitted. Applications must be received prior to the ninth week of classes as established by the official university calendar to be effective for that semester.

Special Students: A student who has been given special permission by the dean of certain schools to enroll as a special student shall pay the appropriate part-time student tuition and fees.

Summer Students: Students enrolled in certain health science programs in which full-time study extends into the summer session will be assessed additional charges for the summer program, field work, or clinical affiliations as may be appropriate. All other students, graduate and undergraduate, registering for courses during the summer will pay the current semester hour credit rate of tuition as indicated below.

FULL-TIME STUDENTS

Tuition charges for full-time students in

FINANCIAL AID DEPARTMENT
1983-84 Student Standard Living Allowances

ALLOWANCE FOR	Residing With Parents	Single	Single Plus One Dependent	Married	Married Plus One Dependent*
Rent	\$ 0	\$1,760	\$3,850	\$ 4,400	\$ 6,050
Food	\$ 660	\$1,430	\$2,310	\$ 3,080	\$ 3,850
Transportation	\$1,000	\$ 800	\$1,200	\$ 1,600	\$ 2,000
Personal	\$ 800	\$ 800	\$1,200	\$ 1,600	\$ 2,000
TOTAL (12-month) Allowances	\$2,460	\$4,790	\$8,560	\$10,680	\$13,900

The above allowances are the average amounts spent by students for their living expenses. These allowances are used to calculate eligibility for university financial aid awards. Unless a student is typical in all respects, actual costs will vary according to life style. These allowances should be useful in the following Self Determination of Cost and Need. Students not enrolled for 12 months should reduce budget proportionately.

*Add \$1,000 for each additional dependent beyond one.

SELF DETERMINATION OF EDUCATIONAL COST AND FINANCIAL NEED

Tuition	\$ _____		Student		Total		Total		Financial
Fees	\$ _____	Plus	Living	Equals	Educa-	Less	Family	Equals	Need
*Books	\$ _____		Allow-		tional		Contri-		
*Supplies	\$ _____		ances		Cost		bution		
TOTAL	\$ _____		\$ _____		\$ _____		\$ _____		\$ _____

*The standard books and supplies allowance is \$250 per year. Graduate/professional allowances will vary greatly depending upon school, department, or major field. Refer to university bulletin for appropriate allowances and for current tuition and fee charges.

16 General Information

the various health sciences programs are given in the table on page 19.

Undergraduate students registering for either the fall or spring semester for 12 or more semester hour credits are billed full-time rates.

Graduate students registering for either the fall or spring semester for nine or more semester hour credits are billed full-time rates. Students enrolled in health science programs must obtain permission from the dean of the school in which they are enrolled before registering for additional courses. If the course is not related to the specialized program, a part-time tuition charge may be assessed. In addition to the per-credit hour tuition charge, students must pay special course fees where such are designated whether or not the course relates to the student's specialized program.

PART-TIME STUDENTS—
REGULAR TERM

Undergraduate Programs	Rate per Semester hour credit	
	Resident	Non- resident
Pharmacy.....	\$ 71	\$134
All other.....	\$ 50	\$113

First professional and Graduate Programs		
Medicine and Dentistry.....	\$233	\$433
Dentistry.....	\$208	\$422
Pharmacy (Pharm.D.).....	\$ 87	\$162
All other.....	\$ 87	\$162

In addition, all part-time students are required to pay a university fee (formerly known as consolidated fee) of \$10 per semester hour credit for which they are registered.

PART-TIME STUDENTS—
SUMMER SESSION

	Rate per Semester hour credit	
	Resident	Non- resident
Undergraduate Programs.....	\$ 50	\$ 75
Graduate Programs.....	\$ 50	\$ 75

In addition, part-time students in the summer session are required to pay a university fee of \$5 per semester hour credit for which they are registered.

Part-Time Graduate Study Fees: Regularly enrolled candidates for the M.S. or Ph.D.

degree in residence on the MCV Campus will be charged full tuition and fees if registered for nine or more semester hours during the regular session. The part-time tuition rate will be paid by students registered for less than nine semester hours. Graduate students must register for a minimum of one semester hour each semester they continue as candidates for a degree. Graduate students completing a dissertation must be registered for research credit reflecting effort involved and resources consumed. The time limit for completion of requirements is five years for the M.S. degree and seven years for the Ph.D. degree.

SPECIAL CHARGES

University Fee: All full-time students are required to pay a university fee of \$240 per academic year.

Part-time students are required to pay a university fee of \$10 per credit hour equivalent each semester and a \$5 per credit hour equivalent for part-time summer enrollment.

The university fee is dedicated to the support of student facilities, campus development, intercollegiate athletics and the MCV Campus Student Health Service. Funds for these programs are allocated annually.

Student Government Association Fee: Students are required to pay a Student Government Association fee of \$22 per academic year. This fee is determined annually and assessed by the Student Government Association on the MCV Campus.

Full-time students are billed for one-half of the university fee (\$120) and one-half of the Student Government Association fee (\$11) each semester.

NON-RECURRING CHARGES

Application	\$20 ¹
Condition Examination Fees	5 per examination
Identification Card Replacement ..	3 each
Late Registration Fee	10 each
Readmission Fee.....	20 each
Tuition deposits required—Apply to first semester tuition.	

¹ Application fee for School of Medicine—\$35
School of Dentistry—\$35.

FEES FOR DORMITORY RESIDENTS

The charges for matriculation, tuition, and other instructional services are the same for dormitory residents as for commuting students. Other dormitory resident charges for the academic year:

Room Rent	
Cabaniss, McRae	\$1,250
Rudd, Bear, and Warner	\$1,200
Dormitory Security Deposit and Damage Fee ...	\$ 50
Meals	
Student Board Plan	
20 meals per week only	\$1,070
15 meals per week only	\$1,040
Board plan rates are for 1983-84 and are subject to change.	

The fees for dormitory rent and student board plan (meals) are payable at the time tuition and student fees are due. Dormitory contracts must be signed and damage deposit paid prior to registration.

Rooms in residence halls are rented for the entire academic year (nine months). Exceptions may be made for students who complete their course of study at the end of the first semester. Only one semester's room rent is due prior to each semester.

All undergraduate students, except fifth year pharmacy students who live in university residence halls, are required to participate in the board plan unless living in a self-sufficient apartment unit. Students who live in nonuniversity housing may subscribe to the board plan and must abide by conditions stated in the contract. Students have the option of subscribing to either the 15 or 20 meals per week plan. The 15-meal plan provides for a student to take any 15 meals during scheduled meal hours in a given week.

Contracts for board (except in cases involving contracts initiated during the spring and summer terms) are for the entire academic year (nine months). Contractual agreement is implied when a student accepts university room arrangements.

Students living off-campus are not required to subscribe to the university board plan but may subscribe to the 15- or 20-meal plan to the extent that space is available. Food service plans for voluntary participants may be contracted on a semester basis or for a full academic year. Students who choose not to subscribe to either food plan may use the cafeteria on an *a la carte* basis.

Students and trainees residing in universi-

ty dormitories—whether they are full-time, part-time or special students in nondegree programs are required to pay a special health service fee of \$51 per semester.

For further information on student housing see page 9.

INSURANCE

The university is not responsible for accidents occurring to students in connection with class, laboratory, shop, field work, athletics, student activities, travel, or other activities.

The university offers to its students an approved insurance plan providing substantial benefits at group rates. The insurance extends for a 12-month period beginning September 1, and includes coverage for accidents, hospitalization, medical, surgical, and other benefits for illnesses. Married students may enroll spouses and children. The university recommends but does not require that all students enroll in the Student Group Insurance. Additional information may be obtained by contacting the Student Accounting Office, Virginia Commonwealth University, 327 West Main Street, Richmond, VA 23284, (804) 786-2228.

REFUNDS AND REBATES

Full- or part-time students who withdraw in good standing shall be entitled to a refund of a portion of their tuition, room, and board fees for the semester in which they are currently enrolled according to the policy stated below. All other fees are non-refundable.

Request for Refund. Requests for refunds shall be made in writing to the dean of the school in which students are enrolled and the Office of Student Accounting. Exceptions to the refund policy are made only in rare instances and only with the approval of the Office of the Associate Vice-President for Health Sciences. Students will be notified of the university's action within 14 days following receipt of the request for refund by the Office of Student Accounting. The following policy governs the refund of tuition, room, board, and applicable fees:

1. Students whose registration is cancelled prior to the end of the add/drop-late registration period will be entitled

to a full refund of tuition and applicable fees. Room fees, except for the \$50 deposit, will be refunded in full during this period. First-year students who fail to register forfeit deposit on tuition.

2. Full-time students reducing their academic status to part-time or part-time students reducing their academic course load before the end of the add/drop-late registration period will be entitled to a refund of tuition and applicable fees reflecting the reduced course load.
3. Students will be entitled to a refund of 50 percent of tuition, room, and applicable fees upon withdrawal *after* the add/drop-late registration period and before the end of the fourth Friday after the first official day of classes for the program in which the student is enrolled. Full-time students reducing their academic course load to part-time or part-time students reducing their academic course load after the add/drop-late registration period will be entitled to a 50 percent refund of tuition and applicable fees reflecting the reduced course load. **NO AMOUNT WILL BE REFUNDED FOR WITHDRAWAL AFTER THE FOURTH FRIDAY AFTER THE FIRST DAY OF CLASSES FOR THE PROGRAM IN WHICH THE STUDENT IS ENROLLED.**
4. A full refund of board plan fees will be made if withdrawal from the board plan is made prior to the first official board plan day. Students withdrawing from the university will be granted a refund based on a weekly proration throughout the term less a \$50 administrative charge.
5. Students will not be entitled to a refund of room fees if they are suspended from the residence halls for disciplinary reasons. Students will not be entitled to a refund of room fees if they voluntarily withdraw from the university residence halls but remain registered for any course(s) at the university unless clearance is granted through the Office of the Dean of Student Affairs.

Students will not be granted refunds

unless they have completed the official withdrawal procedures.

The actual date of withdrawal will be certified by the office of the dean of the school in which the student is enrolled and the Office of University Enrollment Services. The refund, when appropriate, will be computed based on that certified date. Refunds will not be made to students who do not attend classes and have not completed the required withdrawal procedure. Refund processing can take from six to eight weeks.

Contracts for room and board (except in cases involving contracts initiated during the spring and summer terms) are for a two-semester period. Residents who voluntarily withdraw from the university residence halls without clearance from the Office of the Dean of Student Affairs but remain at the university will be responsible for full room and board fees for the remainder of the contract period. Subletting is not permitted. Exceptions to the above policy can be made only by the Office of the Dean of Student Affairs.

DELINQUENT ACCOUNTS

The university will not issue a degree, transcript of grades, or grade reports to any student who has not paid all charges in full. Students whose accounts are not paid in full may not be admitted to final examinations at the end of semesters and will not be permitted to register for future classes..

A student who fails to remit payment of tuition and fees when due may be withdrawn and will not be permitted to attend classes until all accrued charges are paid and the student is officially reinstated. After one week from the date of withdrawal, a student withdrawn for failure to meet payments may not be reinstated. Notice of withdrawal will be made by the dean's office of the school in which the student is enrolled. Application for reinstatement is to be made through the office of the dean.

This policy is waived for accounts that reflect a balance supported by an authorization (scholarship or loan) on file in the Office of Student Accounting. Students are

1983-1984 EXPENSES—MEDICAL COLLEGE OF VIRGINIA OF VIRGINIA COMMONWEALTH UNIVERSITY

Program	TUITION PER ACADEMIC YEAR		Consolidated Fees*(1)	Tuition Deposit	ESTIMATED COST				TOTALS	
	Resident	Non-Resident			Textbooks	Equipment, Instruments, Supplies	Lab, Costs, Uniforms	Miscellaneous Fees and Costs	Resident	Non-Resident
Medicine:										
M-1.....	4,200	7,800	262	100	525	440	35	35	5,497	9,097
M-2.....	4,200	7,800	262	—	450	110	65	—	5,087	8,687
M-3.....	4,200	7,800	262	—	200	100	45	150	4,957	8,557
M-4.....	4,200	7,800	262	—	200	200	70	400	5,332	8,932
Dentistry:										
D-1.....	3,750	7,600	262	100	600	2,150	55	—	6,817	10,667
D-2.....	3,750	7,600	262	—	600	1,980	35	—	6,627	10,477
D-3.....	3,750	7,600	262	—	300	390	10	—	4,712	8,562
D-4.....	3,750	7,600	262	—	200	40	10	—	4,262	8,112
Dental Hygiene:										
DH-3.....	1,180	2,700	262	50	415	320	150	—	2,327	3,847
DH-4.....	1,180	2,700	262	—	175	150	—	300	2,067	3,587
Pharmacy:										
P-3.....	1,700	3,200	262	50	400	80	20	25	2,487	3,987
P-4.....	1,700	3,200	262	—	290	30	35	25	2,342	3,842
P-5.....	1,700	3,200	262	—	50	30	25	400	2,467	3,967
Pharm D.....	1,700	3,200	262	50	220	180	75	*(2)	2,437	3,937
Nursing:										
N-3.....	1,180	2,700	262	50	315	105	100	*(2)	1,962	3,482
N-4.....	1,180	2,700	262	—	290	—	—	*(2)	1,732	3,252
Nurse Practitioner:*(3)										
FNP & OGNP.....	1,475	2,965	165	50	240	330	45	—	2,255	3,745
PNP.....	885	2,025	131	50	240	330	45	—	1,631	2,771
Graduate:										
G-1, G-2, G-3, G-4 (does not include summer).....	1,550	2,900	262	—	VARIABLE				1,812	3,162
Allied Health Professions:										
Health Care Management:*(4)										
HCM-3.....	1,180	2,700	262	50	400	100	—	50	1,992	3,512
HCM-4.....	1,180	2,700	262	—	400	150	—	100	2,092	3,612
Health Administration:										
HAD-1 and 2.....	1,550	2,900	262	100 (HAD-1)	800	200	—	—	2,812	4,162
HAD-3.....	1,550	2,900	262	—	200	100	—	300	2,412	3,762
Med. Record Administration:*(4)										
MRA-3.....	1,180	2,700	262	50	320	55	50	250	2,117	3,637
MRA-4.....	1,180	2,700	262	—	300	100	25	250	2,117	3,637
Medical Technology:*(4)										
MT-3.....	1,180	2,700	262	50	350	100	140	150	2,182	3,702
MT-4.....	1,180	2,700	262	—	75	75	60	150	1,802	3,322
Nurse Anesthesia:*(4)										
NA-1.....	1,550	2,900	262	50	400	125	—	30	2,367	3,717
NA-2.....	1,550	2,900	262	—	200	0	—	30	2,042	3,392
Occupational Therapy:*(4)										
OT-3.....	1,180	2,700	262	50	325	80	25	75	1,947	3,467
OT-4.....	1,180	2,700	262	—	250	60	25	100 (2)	1,877	3,397
Patient Counseling:										
Full-time (incl. summer).....	580	1,055	262	—	—	—	—	—	842	1,317
Summer Intern.....	265	520	60	—	—	—	—	—	325	580
Physical Therapy:										
PT-3.....	1,180	2,700	262	50	400	100	150	200 (2)	2,292	3,812
PT-4.....	1,180	2,700	262	—	300	100	—	680 (2)	2,522	4,042
Radiologic Technology—Clin. Rad. Sci.:										
RT-1*(4).....	1,180	2,700	262	50	295	15	185	—	1,937	3,457
RT-2*(4).....	1,180	2,700	262	—	50	10	—	—	1,502	3,022
CRS-3*(4).....	1,180	2,700	262	50	300	10	—	—	1,752	3,272
CRS-4*(4).....	1,180	2,700	262	—	300	10	—	—	1,752	3,272

*(1) Includes SGA fee of \$22

*(2) Cost of clinical assignments variable

*(3) Includes preceptorship; charge variable

*(4) Additional tuition & fee charges made for summer clinical program

*(5) Clinical affiliation cost

ultimately responsible for any unpaid balance on their account as a result of the sponsor canceling or reducing the award.

The university is participating in Virginia's Set-Off Debt Collection Act of 1981. Under the provisions of this act, a Virginia individual income tax refund will be subject to the university's claim for unpaid balances of tuition and fees.

LOAN REPAYMENTS

Recipients of National Direct Student Loans, Health Professions Loans (Medicine, Dentistry, Pharmacy or Nursing), or other university loans are required to undergo an "exit interview" with a representative of the Office of Student Aid Accounting (327 West Main Street, Richmond, VA 23284) before withdrawal or graduation from the university. Interviews may be scheduled on an individual basis or students may be mailed appropriate forms which must be completed and returned to the office of Student Accounting. Students who are on off-campus assignment and must be absent during the interview process are asked to call the above office [(804) 786-2324] for an appointment. Students are encouraged to call this office if they have questions concerning their rights and responsibilities under any of the loan programs.

FINANCIAL ASSISTANCE

General

Students are advised that financing their education is primarily their or their families' responsibility. A variety of loans, grants, scholarships, and employment is available to those students who can demonstrate a need for financial assistance. Because the level of funding from federal, state, and institutional sources changes from year to year, as does the number of needy students, no guarantee can be made as to the amount of financial aid offered to any student. The timeliness of aid application submissions and the thoroughness of the individual student's exploration of all forms of financial assistance will minimize the lack of money as an obstacle to the pursuit of educational goals.

Students should determine the total educational cost for the academic year to deter-

mine the extent of their financial need. Direct educational costs (tuition, fees, books, instruments, and supplies) are shown in tabular form on page 19. Institutional allowances for indirect costs (room, board, transportation, and personal expenses) are shown on page 15. After adding direct costs and individual indirect costs and subtracting all student and family contributions, if a need exists, the student should seek financial aid.

Application Procedures

To apply for any type of aid the student must complete the Financial Aid Form. This form is available at most high schools and colleges or from the Financial Aid Office. The Financial Aid Form is submitted to the College Scholarship Service with a processing fee.

The student must also complete the University Aid Form which is available from the Financial Aid Office. This form is submitted directly to the Financial Aid Office. All financial aid applicants who submit these forms will receive a response from the university which describes the applicant's eligibility for aid. Additionally, transfer students are required to submit a financial aid transcript indicating financial aid received while attending other institutions of higher education. All graduate and professional students are considered transfer students for this purpose.

Applications are accepted any time after January 1 for the following academic year. A student does not have to be accepted by the university before filing the required forms. Because some funds are limited, students have the best opportunity to receive full consideration if they apply early. The recommended filing deadline is March 1 preceding the academic year of attendance. Financial aid applications require a minimum of 60 days to process. Applications submitted after March 1 may require an even longer period to process and may result in reduced or limited funding.

All questions as well as requests for applications or assistance should be directed to the MCV Financial Aid Office, Virginia Commonwealth University, Box 244, MCV Station, Richmond, VA 23298.

RECENT AND PENDING FEDERAL AID LEGISLATION

The future of federal and state financial aid programs is uncertain. Pending legislation may continue any or all of these programs with their major features intact or may authorize replacement or discontinuance. Because of this uncertainty the university cannot offer assurances that financial assistance programs will not be altered before the 1983-84 year. Program descriptions are for 1982-83.

FINANCIAL AID PROGRAMS

Guaranteed Student Loans: Loans from this program are open to all students who can prove a need for the loan. Full-time undergraduate students may borrow up to the amount of their need or \$2,500 per academic year and graduate students may borrow up to \$5,000 per year. Loans are interest-free while the student is enrolled at least half-time. Repayment is not required until the student graduates or terminates attendance. All students are eligible for the federal interest benefits during the enrolled period. Borrowers may take as long as ten years to repay the principal at the nine percent annual interest rate. The program now requires that all students demonstrate a financial need. A Financial Aid Form described above is required of those students who seek this loan.

Virginia Education Loan Authority: The VELA Loan Program is a major source of Guaranteed Student Loans to eligible state resident students who are unable to secure loans from private lenders. Information and application forms are available from the Financial Aid Office. The same provisions outlined above apply to this program or any other form of a Guaranteed Student Loan.

Auxiliary Loans to Assist Students or Plus Loans: Under this federal program of loans to students and parents, it is expected that \$2,500-\$3,000 can be borrowed at an 11 percent interest rate. Financial need is a criterion for receiving this loan. Repayment would begin within 60 days of receipt of the funds and extend over as many as ten years. Persons interested in this program should inquire at the Financial Aid Office for details.

Pell Grant: This federal government pro-

gram, formerly known as the Basic Educational Opportunity Grant, provides grant assistance to undergraduate students with awards which range from \$120 to \$1,800. From information submitted on the Financial Aid Form, a student's eligibility is determined according to the Pell Grant financial need requirements. Students must be enrolled at least half-time to be eligible.

College Scholarship Assistance Program: This is a Virginia program of grants to state resident undergraduate students with a range from \$200 to \$1,000. The deadline for filing the Financial Aid Form for this grant is April 15 preceding the academic year of attendance. This program is administered by the State Council of Higher Education in Virginia. Questions about eligibility should be referred to this agency. The university does provide assistance in the disbursement of these funds.

Students who are not Virginia residents are encouraged to seek similar grants from their appropriate state agency.

College Work-Study Program: This is a joint federal and university effort which permits students to work for the university or local nonprofit agencies. Students are paid weekly on an hourly pay scale. Job placement is made by the Financial Aid Office. Awards range from \$200 to \$5,000 per year.

National Direct Student Loan: This is a joint federal and university program which may loan from \$200 to \$2,500 per year to students. It is repaid beginning six months after termination of attendance at four percent interest for a period not to exceed ten years.

Health Professions Student Loan: This is a joint federal and university program which permits students to borrow up to \$10,500 a year. The loan is repaid beginning 12 months after termination of attendance at nine percent interest for a period not to exceed ten years. Under certain conditions, up to 85 percent of the loan obligation may be repaid by professional service in a shortage area. Payment of the loan may be deferred during periods of internship and residency.

Nursing Student Loan: This is a joint federal and university program through which both undergraduate and graduate nursing students may borrow from \$200 to \$2,500 per year. The loan is repaid beginning

nine months after termination of attendance at six percent interest.

Virginia Undergraduate Grant: This is a university program of grant aid to undergraduate students who are Virginia residents and who have high financial need. Awards may range from \$200 to \$1,000 per year.

Supplemental Educational Opportunity Grant: This is a joint federal and university program of grant aid to undergraduate students who have exceptional financial need. Awards range from \$200 to \$2,000 per year.

Exceptional Financial Need Scholarship: This is a federal program which offers to medical, dental, and pharmacy students with exceptional financial need a scholarship which pays for all direct college costs and allows a 12-month stipend of \$556 monthly. Only first-year students are eligible.

Other Scholarships For Medical and Dental Students

U.S. Armed Forces Scholarship: The Army, Navy, and Air Force provide for up to four years of paid tuition and fees, book and supplies allowance, and about \$560 per month stipend in exchange for military service after graduation. Normally the recipient serves one year on active duty for each year of scholarship, with a minimum of three years.

National Health Service Corps Scholarship: The U.S. Public Health Service provides for up to four years paid tuition and fees, book and supplies allowance, and a monthly stipend of \$556, in exchange for fulltime clinical practice in the National Health Service Corps. Normally the recipient serves one year for each year of scholarship, with a minimum of two years of obligation. Selections will be made by NHSC prior to August of each year.

State Family Medicine Scholarship: The state pays \$2,500 per year to students who agree to serve, for the number of years for which the scholarship is received, in a state department such as Mental Health and Mental Retardation, Welfare or Corrections, or in a designated area of need in the state.

State Dental Practice Scholarship: The state pays \$2,500 per year to students who

agree to serve, for the number of years for which the scholarship is received, in a state department such as Mental Health and Mental Retardation, Welfare or Corrections, or, if there are no vacancies in state institutions, in a designated area of need in the state.

National Medical Fellowships, Inc., Scholarship: This nonprofit group offers scholarships to members of minority groups in medicine. Scholarship awards are made primarily on the basis of need. Currently the maximum first-year award is \$1,400 and the second-year is \$500. Third- and fourth-year medical students are not eligible.

Health Education Assistance Loans: These loans are made by selected banks to students in medicine, dentistry, or pharmacy. Professional students may borrow up to \$20,000 per year for as many as four years. Unlike other student loans, there is no subsidy for interest payments and students must pay the going market rate from the day the loan is made until the day the entire loan is retired. For this reason, these loans must be considered a last resort form of financial assistance.

ADDITIONAL AID SOURCES

Departmental Scholarships: Several schools and departments make scholarships available to current or admitted students. Eligibility may or may not be based on financial need, and other selection criteria are generally used. Such scholarships, however, must be included in the total financial aid award made to students receiving additional aid through the Financial Aid Office. Inquiries should be directed to the appropriate dean or department chairman.

Emergency Loan

This short-term institutional loan program is used to assist enrolled students with immediate financial difficulties, generally of a personal and unavoidable nature. Loans are normally limited to \$200 and repayment is due within 30-60 days. Information is available at the Financial Aid Office.

General Academic Regulations

ADVISING PROGRAM

Students are responsible for the proper

completion of their academic program. They should be familiar with the university bulletin, including general academic regulations and any other supplementary academic regulations presented in their individual school sections. The offices of the deans and department chairmen, in cooperation with the faculty, endeavor to follow each student's academic progress, and students are encouraged to seek counsel whenever there is a need. If an advisor is unable to resolve a problem satisfactorily, the student will be referred for further advice as is deemed appropriate and necessary.

ATTENDANCE/CONTINUANCE POLICIES

Attendance and continuance policies vary among the individual schools and may be found under the appropriate sections in this bulletin. As a general rule, class attendance requirements are announced by instructors at the first class meeting.

CANCELLATION OF REGISTRATION

A cancellation of registration must be made prior to the first day of classes by notifying in writing University Enrollment Services and the dean of the school in which the student is matriculated. Refunds will be issued in accordance with procedures set forth under the Refunds and Rebates section of this bulletin.

CHANGE OF MAJOR

Students wishing to change their major areas of concentration must have the approval of the dean of the school and admissions committee, where appropriate, and the chairman of the department to which they are applying. Change of major forms are available in the Office of University Enrollment Services, Room 1—055, Sanger Hall.

Students who are currently enrolled in a program on the MCV Campus and who wish to change to a curriculum on the Academic Campus will do so through a change of major. Such students are subject to the continuance policy of the Academic Campus in making a change of major.

CHANGE IN REGISTRATION

Students registered for a planned program

are expected to maintain their registration except for special reasons. Should a change of program be deemed advantageous to the student and the school by the appropriate school dean, the student may make the change during the add/drop period after the beginning of classes. Changes in registration are performed at the Office of University Enrollment Services by the following procedure:

(a) An add/drop form, obtained at the Office of University Enrollment Services, is used to add or drop courses and must be signed by the student's advisor, department chairman, and dean.

(b) Courses dropped during the add/drop period do not become part of the student's permanent academic record.

Following the add/drop period no courses may be added. Courses may be dropped by obtaining the proper form from the Office of University Enrollment Services which must be signed by the student's advisor, department chairman, and dean. Courses dropped after the add/drop period and before the end of the first eight weeks of classes will remain a part of the student's permanent academic record and will carry the grade of "W." If a student fails to complete an add/drop form when he or she ceases to attend a class or drops a course after the end of the first eight weeks of classes, this normally results in the assignment of a failing grade in the course. A course may be dropped after the end of the first eight weeks of classes only under unusual circumstances and with approval of the department chairman and dean. (For grade definitions, see section on grades.)

VETERANS ADMINISTRATION EDUCATIONAL BENEFITS

To receive Veteran's Administration educational benefits, veteran students must comply with established procedures. Veterans receiving benefits must request certification each semester and each summer session from the University Office of Veteran Affairs located at 901 West Franklin Street, Room 114B, (804) 257-0977. Veterans should contact this office for additional information.

DEGREE REQUIREMENTS

Candidates for degrees are eligible for graduation upon completion of their school's requirements in effect at the time of first registration, provided requirements are met within the time limit specified by the school not to exceed a period of seven years.

The institution reserves the right, however, to require students whose programs are interrupted for any reason to meet requirements as specified by the dean or director of the program. Changes in the student's original program may be necessary when, for example, a curriculum has been revised, offerings are no longer available, significant changes in course content have occurred, or repetition of material is deemed essential to ensure continuity and clinical competence. Students failing to satisfy the time requirement shall satisfy requirements in effect at the time of readmission into the degree program.

Most of the health sciences programs include clerkships or practicums as a required part of their curricula. Some of these activities may be provided in off-campus facilities requiring students to travel and reside some distance from Richmond. As a rule, no refund of payments for tuition, fees, or other purposes may be expected by the students if credit is granted for time spent in this phase of the program.

All degrees are conferred by the VCU Board of Visitors upon recommendation of the faculties of the various schools. Degrees are granted at the close of the semester or summer session in which the students complete their work.

Candidates for degrees to be conferred at the close of the spring semester must be present to receive their degrees unless excused by the deans of their schools. No individual may be exempt from this regulation.

Graduate and Professional Degrees. Degree requirements are specifically outlined in the various schools' sections in this bulletin.

General Undergraduate Degrees. In addition to the course requirements indicated in the curriculum outlines, candidates for degrees are governed by the following policies:

Grade-Point Average. An overall grade-point average (GPA) of at least 2.0 (a "C")

average), except as may be specified for certain programs, is required on all work presented for either the associate or bachelor's degree.

Required Credits. The total number of semester hour credits required for graduation depends on major area of concentration and the type of degree.

Resident Requirement. Degree candidates are required to complete the last 30 credits for a bachelor's degree and the last 15 credits for an associate degree at this institution.

Double Major Concentration. A double major is the fulfillment of requirements in two majors. For further information consult the *Virginia Commonwealth University Undergraduate Bulletin*.

GRADING SYSTEM

Grade Reports. An official university grade report, showing the student's standing in courses and grade-point average, when specified by the school, will be mailed each semester and at the end of the Summer Sessions to the student's mailing address as designated on the registration form.

Grade Point Average. The grade-point average, reflecting semester and/or cumulative work as specified by each school is computed by dividing the number of grade points earned by the number of semester hours attempted for which grades "A" through "F" have been assigned. The GPA is intended to assist students in analyzing work performance and in determining areas requiring greater attention.

Repeated Courses. Because some schools do not allow students to repeat courses, any student planning to do so must first consult with his or her advisor, program director, or department chairman.

The semester credits attempted and the grade points earned for all attempts are included in computing the cumulative grade-point average. No matter how often a course is repeated, it may be counted only once as credits presented toward graduation.

GRADES

Work quality is measured by the four-point grade system with the following equivalents:

Grade Symbol and Meaning	Grade Point Value Per Semester Credit
A	4.0
B	3.0
C	2.0
D	1.0
F	0.0
I = Incomplete	—
P = Pass	—
AU = Audit	—
W = Withdrawn	—
H = Honors	—
PR = Progress	—
CO = Continued	—
NC = Grade assigned for continuing enrollment	—
NG = Administrative grade assigned when no grade submitted by the instructor.	—

Grades designated by a blank, (—), in the grade-point column are not considered in the computation of hours attempted, hours earned, grade points earned, or grade-point average.

I = Incomplete—The grade of incomplete is assigned when course requirements, because of circumstances beyond the student's control, cannot be met by the end of the semester. The awarding of an "Incomplete" presupposes an understanding between the instructor and the student. Routine use of the grade of "I" is discouraged.

(a) With the exceptions of the Schools of Medicine and Dentistry, the maximum limit for the removal of an "Incomplete" from the permanent record card is the end of the last day of classes of the semester (or Summer Session) following the term in which the "Incomplete" was incurred. For programs leading to either the M.D. or D.D.S. degrees, the maximum time limit is the last day of classes of the second following semester after the semester of registration in the course or specified project. At the end of the specific semester an unremoved grade of "Incomplete" is automatically changed to a failing grade. Any exceptions to this regulation must be extraordinary in nature and must be approved by the dean of the school involved upon the recommendation of the instructor; a written statement must be filed with the Office of University Enrollment Services.

(b) The "Incomplete" will not be computed into the student's grade-point average.

(c) If course requirements are not completed by the end of the specified semester, a

grade of "F" will be assigned.

W = Grade of withdrawn—The grade of "W," denoting a student's withdrawal from a course, will be assigned to any course dropped after the official add/drop period but prior to the mid-semester point (eight weeks after first day of classes). The grade of "W" will appear on the student's academic record but will not be computed as work attempted or computed into the GPA.

AU = Grade of audit—Upon the approval of the student's advisor and the instructor and when class size permits, a student may register for a course on an audit basis. Audit students are charged the regular rate of tuition and fees, and audit courses are counted as a part of the student's semester credit hour total. A student auditing a course is subject to attendance regulations and may be subject to other course requirements at the discretion of the instructor. A grade of "AU" will be entered on the academic record of all students enrolled for audit.

A change in registration from "audit" to "credit" or from "credit" to "audit" must be effected during the add/drop period. A course taken for audit cannot be given credit at a later date.

H = Honors—Courses assigned the "Honors" grade will not be computed into the grade-point average.

P = Grade of Pass—Awarded as a grade for certain courses to denote satisfactory completion of requirements. Courses assigned the grade of "P" will not be computed into the grade-point average.

NC = Grade of NC—This grade may be assigned as an interim grade for work on thesis or dissertation.

PR = Grade of Progress—Assigned as an interim grade for certain continuing courses, research, or thesis projects which run over several grade reporting periods. The grade of "PR" may be assigned only in courses approved for such grading. Unlike the grade of "I," the grade of "PR" will not automatically be changed to a failing grade at the end of the succeeding semester.

CO = Grade of Continued—The grade of "CO" may be assigned as an interim grade for those courses which run over several grade reporting periods. The "CO" indicates that the course is not expected to be

completed in a single semester and that the student **must re-register for the course**. Upon completion of the course a final grade will be assigned to the current semester and the previous "CO" grade(s) will remain. This grade may be assigned only in courses approved for such grading.

SCHOLARSHIP HONORS

Dean's List. For certain schools, students are placed on the dean's list for one semester if they have made a grade-point average of 3.5 in the preceding semester, based on a minimum load of 15 credits with no grade below "C." Students with grades of incomplete or who are absent from the final examination are not eligible for the dean's list.

Graduation Honors. Candidates for degrees in certain schools may be eligible for special scholarship recognition under the following conditions:

Summa Cum Laude. Awarded for a cumulative grade-point average of 3.9 and above on all credits attempted.

Magna Cum Laude. Awarded for a cumulative grade-point average of 3.6 to 3.89 on all credits attempted toward the degree awarded.

Cum Laude. Awarded for a cumulative grade-point average of 3.3 on all credits attempted toward the degree awarded.

Graduation honors for medical students will be determined by the Medical School Promotion Committee.

A transfer student, to qualify for graduation honors for the baccalaureate degree, is required to complete a minimum of 45 credits at VCU with a scholastic average of 3.9 or above for summa cum laude, 3.6 to 3.89 for magna cum laude and 3.3 to 3.59 for cum laude. Performance at other institutions must be of sufficient quality to sustain the above averages.

Recognition of graduation honors will be made on the student's diploma, permanent academic record, and in the commencement program.

STUDENT LOAD

First-professional students (seeking M.D. or D.D.S. degrees) are always defined as full-time students unless specifically desig-

nated otherwise by the individual school dean.

In those programs where it is used, a semester credit is defined as one hour per week of lecture-recitation or not less than two hours per week of laboratory work throughout a semester.

Graduate Level

All full-time graduate students are expected to register for at least 12 semester hour credits per semester, including research. As an example, students who are registered for ten credits in formal courses are expected to undertake two credits in research under their advisors or other approved faculty members. Students registered for nine or more semester hours are billed for full tuition.

Undergraduate Level

Full-time Students. In general, students on the MCV Campus carry more than 15 credits per semester. A minimum of 12 credits per semester constitutes a full-time student load. Students registered for 12 or more credits per semester are billed for full tuition.

Part-time Students. A student is classified as "part-time" if during any semester he or she is registered for less than 12 credits. The term "part-time" applies to degree-seeking students as well as to nondegree-seeking ("special") students.

GRADUATION APPLICATION

The university confers degrees in May, August, and December; however, it holds an annual commencement exercise in May only. Each student who expects to complete the degree requirements by the end of a semester or summer session is required to file an application for a degree. Application forms may be obtained from the Office of University Enrollment Services. Students must submit degree applications to the dean's office of the school in which they are enrolled no later than the dates indicated in the university calendar.

TRANSCRIPTS

The transcript is a copy of the student's permanent academic record. An official transcript carries the university seal.

Transcripts given directly to students do not carry the university seal.

Transcripts of student academic records are issued by the Office of University Enrollment Services/Records only upon the written request of the student. The request should be made at least one week prior to the date needed.

Transcripts cannot be issued during a two-week period immediately following semester examinations.

No transcript will be issued unless indebtedness to the university has been satisfied.

Transcript requests signed by the student may be submitted in person or by mail to the Office of University Enrollment Services/Records, MCV Station, Box 277, Richmond, VA 23298.

WITHDRAWAL FROM THE UNIVERSITY

Voluntary withdrawals from any of the schools or programs must be approved in writing by the dean of the school in which the student is enrolled and the Office of Student Accounts; otherwise, a student will not be entitled to honorable dismissal.

Students finding it necessary to withdraw before the end of a semester must complete an official university withdrawal form obtained from the Office of University Enrollment Services.

For students officially withdrawing from the university before mid-semester (end of the eighth week), the permanent record will indicate a grade of "W" for each course being pursued.

For students withdrawing without permission, the permanent record will carry a notation, "Withdrawn Unofficially," and the grade of "F" will be assigned for each course pursued at the time of unofficial withdrawal.

HEALTH-RELATED WITHDRAWALS

While most students on the MCV Campus are expected to work toward completion of their degrees without interruption, health-related problems may necessitate withdrawal from the university. Although students on the Academic Campus may not complete their degree work without interruption, they, also, may find it necessary to withdraw

because of health-related problems.

1. Health-related withdrawals must be approved in writing by the dean of the appropriate school.
2. The student must furnish the Office of the Dean a written request for permission to withdraw for health reasons together with a statement from his/her physician indicating the nature and severity of the condition, when the student should stop attending classes and the estimated date of return to school.
3. In the event that the student's health problem poses a danger to the student, to patients, or to others with whom the student may come in contact and the student is unable or refuses to initiate steps to withdraw as stated in Item 2 above, administrative withdrawal of the student may be made by the dean of the school upon consultation with the appropriate faculty and a qualified physician.
4. If it is the decision of the dean to grant the withdrawal, the student will receive written notice stipulating conditions and time limits.
5. All tuition refunds or adjustments will be made in accord with university policy as stated in this bulletin.
6. Because curricular and course content changes may occur and a student's progress toward a degree may be adversely affected due to an extended absence, specific time periods may be imposed by individual schools with respect to the length of time allowed for absence from school. If there is a delay in return beyond the allotted time period without written consent of the Office of the Dean, the student will petition for return with advanced standing. The petition will be processed according to regularly established procedures of the school.
7. Prior to return to school, the student must submit to the dean a statement from his/her physician. This statement should document that the condition which necessitated the withdrawal has been corrected to a point where the student can successfully complete all curriculum requirements with reasonable accommodation, including classroom,

laboratory, clinical, and field work experiences.

8. After the decision to readmit the student is made, the dean will inform the student in writing when he/she can resume class attendance. The student will be required to meet curricular requirements as specified by the dean.

TERMINATION OF ENROLLMENT

The university reserves the right to terminate the enrollment of any student for unlawful, disorderly, or immoral conduct, or for persistent failure to fulfill the purposes for which he or she was matriculated. Any students whose relations are so severed forfeit all rights and claims with respect to the institution.

In addition to dismissal for failure to comply with standards of conduct described in the *Rules and Procedures of the University* and the *Medical College of Virginia Honor Code*, a student enrolled in MCV/VCU may be dismissed from the school in which he is enrolled for failure to meet academic requirements prescribed by his school or failure to exhibit the attitudes and skills deemed necessary to function within his chosen professional practice. Virginia Commonwealth University recognizes its responsibilities to the health professions and to the consumer of health services. Therefore, any action by a student of MCV/VCU considered to be unprofessional conduct according to the codes of ethics and the laws and regulations governing the student's chosen profession, shall constitute cause for disciplinary action.

Unprofessional conduct includes, but is not limited to

1. Fraud or deceit in gaining admission to MCV/VCU, i.e., false or obviously misleading representations on the admissions application.
2. An act that violates the established legal standards regarding conduct of one person towards society, i.e., stealing, lying, cheating, and slander.
3. Conviction of a felony involving moral turpitude.

The individual health sciences schools recognize and support the statements set forth by the licensing boards of the respective health professions as they relate to ex-

amination, licensure, and the practice of each profession. When applicable, these standards may be used in determining a student's eligibility for continuance in or readmission to MCV/VCU.

LIMITATIONS ON BULLETIN PROVISIONS

All rules and regulations set forth in this bulletin will apply until further notice. The right is reserved to make changes in courses of study, fees, rules and regulations governing the conduct of the work in all schools and programs, faculty and staff, and classification of students whenever university authorities deem it expedient or wise to do so.

GENERAL COURSE INFORMATION

Course Numbering

Courses numbered in the 100 and 200 series comprise the lower-division offerings and are open to all students; courses numbered in the 300 and 400 series comprise the upper-division offerings and are designed primarily for juniors and seniors. Courses in the 500, 600, and 700 series are for fifth-year pharmacy, first-professional, and graduate students.

Evening and Summer Studies offerings are the same as those listed herein.

Course Numbering System

Beginning with the 1982 fall semester, the following uniform course numbering system went in effect.

1. All course numbers consist of three digits (XXX).
2. The first digit relates to the course level as follows:
 - a. 0XX Non-credit Courses
 - b. 1XX Undergraduate, Lower Level
2XX
 - c. 3XX Undergraduate, Upper Level
4XX
 - d. 5XX Introductory Graduate Courses
First Year, First professional (Medicine and Dentistry)
Fifth Year Professional Baccalaureate (Pharmacy)
 - e. 6XX Graduate Courses
7XX

6XX Second Year, First Professional (Medicine, Dentistry, and Pharmacy)

7XX Third and Fourth Year, First Professional (Medicine and Dentistry)

Course Interpretation

A single number listing for a course, such as PMC 638, indicates that it is a one-semester course and may be offered each semester or only one semester each year.

Courses listed with a double number, such as GIS 511, 512 and designated as semester courses, consist of two one-semester courses, either semester of which may be taken without the other.

Courses listed with a double number, such as PHT 307-308 and designated as a continuous course, consist of two one-semester courses, the first of which can be taken without the second, but the second of which cannot be taken without the successful completion of the first.

The university reserves the right to withdraw any course or program.

ABBREVIATIONS

AHP	Allied Health Professions
ANA	Anatomy
BAS	Basic Sciences
BIC	Biochemistry
BIO	Biology
BIP	Biophysics
BIS	Biostatistics
BUS	Business

CRS	Clinical Radiation Science
DEH	Dental Hygiene
DEN	Dentistry
EDU	Education
END	Endodontics
GED	General Dentistry
GEN	Human Genetics
GRS	Graduate Studies
GTU	Gerontology
HCM	Health Care Management
HAD	Health Administration
MAT	Mathematics
MED	Medicine
MER	Medical Record Administration
MET	Medical Technology
MIC	Microbiology
NUA	Nurse Anesthesia
NUR	Nursing
OCC	Occlusion
OCT	Occupational Therapy
ORP	Oral Pathology
ORS	Oral Surgery
ORT	Orthodontics
PAC	Patient Counseling
PAT	Pathology
PED	Pedodontics
PER	Periodontics
PHA	Pharmacy
PHC	Pharmaceutical Chemistry
PHT	Physical Therapy
PHP	Pharmacy and Pharmaceuticals
PIO	Physiology
PMC	Pharmacology
PSY	Psychology
RED	Restorative Dentistry
REP	Removable Prosthodontics
RTE	Radiologic Technology
SOC	Sociology
SLW	Social Work
STA	Statistics

For other abbreviations, consult the *VCU Undergraduate Bulletin*.



PART II— School of Medicine

Staff—Office of the Dean of the School of Medicine

JESSE L. STEINFELD, M.D.
Dean of Medicine
ALBERT J. WASSERMAN, M.D.
Executive Associate Dean
FREDERICK J. SPENCER, M.B.
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W. KENNETH BLAYLOCK, M.D.
Associate Dean, Graduate Medical Education
JOHN T. FARRAR, M.D.
Associate Dean, McGuire Veterans
Administration Medical Center
WARREN W. KOONTZ JR., M.D.
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REUBEN B. YOUNG, M.D.
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THOMAS M. ROSE, M.S.
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DOUGLAS G. PALMORE, M.Ed.
Assistant Professor, Medical Education
KLARA K. PAPP, Ph.D.
Assistant Professor, Medical Education

The School of Medicine of the Medical College of Virginia opened on November 5, 1838 as the medical department of Hampden-Sydney College.

Full-time clinical faculty were first appointed in 1928, and improved facilities became available between 1936 and 1941 with completion of the 600-bed West Hospital, A. D. Williams Clinic, and Hunton Hall dormitory, which was located on the current site of the new hospital. Growth in faculty, stu-

dents, and facilities continued after World War II leading to the development of today's academic health center.

Current physical improvements in progress on the MCV Campus include the recently completed 538-bed MCV hospital along with major renovation of other in-patient and out-patient facilities to be completed by the mid-1980s. In addition, construction is now nearing completion of new McGuire VA Medical Center which will continue to provide excellent patient care, training, and research opportunities for the School of Medicine through its affiliation programs.

GENERAL INFORMATION

The mission of the School of Medicine is constant improvement of the quality of health care for citizens of Virginia, using innovative, scholarly activity to create new knowledge, to provide better systems of medical education, and to develop more effective health-care methods.

The School of Medicine shares the general objectives of the Medical College of Virginia of Virginia Commonwealth University:

1. To maintain an environment of educational excellence that will attract students and faculty interested in an institution maintaining the highest academic standards.
2. To promote an educational atmos-

phere that will develop in students: (a) desire and interest in lifelong learning, (b) intellectual curiosity, and (c) excellence in skills and knowledge required for the solution of problems of health and disease.

3. To provide standards of clinical practice and scientific investigation that will serve students as examples throughout their professional careers.

The primary aim of the School of Medicine is to provide an academic environment appropriate for the education of its students, including undergraduate medical students and graduate physician house officers, and continuing education directed towards the needs of practicing physicians. In the classroom, laboratory, clinic, and hospital, the faculty and students are brought together in teaching-learning experiences promoting scientific scholarship and personal growth in knowledge and professional skills.

The School of Medicine and its faculty have vested responsibilities for the advancement of knowledge through research and for service to the community through application of skills in health-care leadership and patient care. Therefore, we share with teaching the interdependent and almost inseparable objectives of research and service.

FACULTY AND FACILITIES

The School of Medicine faculty consists of 134 basic scientists, 388 geographic full-time clinicians including affiliates, assisted by 468 interns and residents, and 12 part-time and 564 volunteer clinical faculty. Programs of instruction and research are conducted on campus, at the McGuire Veterans Administration Medical Center, and affiliated hospitals in an effort to expose the student to the variety of clinical disorders encountered in the eastern United States. Those affiliated community hospitals beyond Richmond include Northampton-Accomack Hospital in Nassawadox, Johnston Memorial Hospital in Abingdon, Petersburg General Hospital in Petersburg, Riverside Hospital in Newport News, John Randolph Hospital in Hopewell, and Rappahannock General Hospital in Kilmarnock.

ADMISSIONS

The School of Medicine participates in the

American Medical College Application Service (AMCAS). The AMCAS application forms can be obtained from AMCAS, Suite 301, 1776 Massachusetts Avenue, N.W., Washington, D.C. 20036. Application request forms are available from premedical advisors in colleges and universities or from the Admissions Office of the School of Medicine.

Application for the School of Medicine should be made on or after June 15 of the year preceding intended matriculation. The closing date for filing applications for this institution is November 15 of the year preceding attendance. Selection priority is given to Virginia residents. Members of minority groups underrepresented in medicine are encouraged to apply.

Screening review of the AMCAS information is conducted. To be considered further, nonresident applicants must have a minimum overall and science grade-point average of 3.2 and a score of eight in each of the areas of assessment on the MCAT. Resident applicants in noncompetitive ranges will be informed of that fact.

A nonrefundable \$35 application fee and supplemental information, including evaluations, are required with all applications accepted for further consideration. The latest date for returning supplemental information is December 1 of the year preceding attendance.

As a policy, the School of Medicine will not admit students from other health sciences schools at Virginia Commonwealth University until such students have completed the degree program for which they are enrolled.

Through AMCAS, the School of Medicine participates in the Early Decision Plan. This program permits an applicant to file a single application through AMCAS on or after June 15 but prior to August 1. Applicants filing under the Early Decision Plan will receive consideration and a response on or before October 1. It is required that all applications for the Early Decision Plan be supported by the results of the new MCAT test at the time of application.

The early notification date of this plan ensures that those who may be unsuccessful have ample time to request further distribution of their applications to other medical

schools. Further information on the Early Decision Plan is available in AMCAS application material.

All deadlines are strictly adhered to.

Requirements for Entrance

The new MCAT is required as part of the supporting credentials. It is necessary that the test be taken no later than the fall of the year of application since selections will be complete by the time of the spring testing of the year of admission. This test is produced by the American College Testing Program, P.O. Box 414, Iowa City, Iowa 52240, and is administered in colleges and universities throughout the country. Information about the MCAT is available through premedical advisors or directly from the American College Testing Program.

Applicants are occasionally admitted on the basis of 90 semester hours of outstanding achievement; however, the press of students who are completing their baccalaureate programs has limited this selection to a very small number in recent years. The major program for premedical students should be selected in accordance with the individual student's aptitude and interest. Our statements of prerequisites have been reduced to a minimum in order to permit the widest possible latitude in preparation for medical education.

Prerequisites for admission include a minimum of 90 semester hours (or the equivalent) in a college or university accredited by the regional accrediting agency. This program of study must include a minimum of

1. English—two semesters.
2. College mathematics—two semesters.
3. Biological science (eight semester hours), including laboratory experience. This may be satisfied by general biology, general zoology, or botany. No more than half may be botany.
4. A course in general or introductory chemistry (eight semester hours), including laboratory. An appropriate portion of this requirement may be met by courses in analytical chemistry or physical chemistry.
5. One full course in organic chemistry (six semester hours), including laboratory. This course should be equivalent

to and acceptable for continued studies in a chemistry major.

6. A course in general or introductory physics including laboratory experience (eight semester hours).

Students are encouraged to pursue their own intellectual interests in college to obtain a maximum of breadth and variety in their education, consistent with their major program. Courses in medically related science areas will not relieve the student of responsibility in the medical curriculum.

In addition to requirements, some recommended courses would include

(1) Cell biology (molecular biology, cell physiology). Courses in these areas incorporate appropriate content from chemistry and physics in definition of biological phenomena at sub-cellular and molecular levels thereby forming an excellent base for further studies in medicine.

(2) Genetics. The significance of this area of study is constantly growing as our knowledge expands and forms a functional portion of medical knowledge.

(3) Embryology. This area of biology presents aspects of anatomic structure and developmental characteristics at the microscopic level. Courses in embryology, therefore, serve as useful source material in development of the anatomical vocabulary and histological knowledge necessary for a medical student.

(4) Advanced mathematics. The fundamental nature of mathematics as a tool for acquisition and evaluation of knowledge makes it significant in any advanced educational process. Calculus should be included for all students aspiring to medical research.

(5) Behavioral science and psychology. Courses in this area of study serve to increase the understanding of individual and group behavior.

Selection Factors

Demonstrated academic skill and ability, as well as attributes of character and personality, are of significance to the Admissions Committee in the selection process. A review of academic achievement as represented by the standard academic record and summaries, MCAT scores, evaluations, and interviews are all sources of information on

which the comparative evaluation process is based.

Review of the completed application file and interviews with members of the Admissions Committee are a definite part of the procedure. The interview is set up as an opportunity for the applicant to become acquainted with the institution and for the opportunity it offers to supply information for the selection process. It is preferred that interviews take place on campus with members of the Admissions Committee. In instances in which this is difficult or impossible to accomplish, regional interviews may be arranged. It is also possible to have interviews from another medical school transferred in support of the student's application here, should that prove the most convenient mechanism.

Since it is expected that more applicants will be interviewed than can be accepted, appearance for an interview is not an indication of acceptance.

Offers are made, as previously indicated in the Early Decision Plan and on the uniform acceptance date of October 15 with rolling admissions thereafter until the class selections have been completed, generally by April of the year of attendance. The alternate list is constituted from selected and notified candidates at the time the class is filled. It is from this group of applicants that replacements are drawn for any vacancies which may occur in the selected class between that time and the third week of attendance.

Since selections are made in advance of actual attendance, all acceptances are made on condition of satisfactory completion of courses planned or in progress. It is expected that candidates will maintain acceptable standards of deportment.

Students offered acceptance into a class are expected to respond within two weeks of that offer. If such a response presents a problem, extension of the time of response should be sought. Enrollment of accepted candidates is considered complete only after payment of the \$100 deposit against the first tuition payment. This deposit will be returned to the candidate should withdrawal take place prior to March 1 of the year of attendance.

By the act of matriculating in the School

of Medicine, the student accepts the responsibilities attendant upon this opportunity and agrees that during the time he is registered as a student he will follow the rules and regulations established by the governing bodies of the school and of the university.

TRANSFER IN ADVANCED STANDING

Advanced standing admission is open only to students in good standing in American and foreign medical schools recognized by the World Health Organization. Such individuals must present scores for Part I of the National Board of Medical Examiners' examination or the Medical Science Knowledge Profile as part of the application credentials. Consideration for transfer from a foreign medical school is limited to persons who were Virginia residents at the time of enrollment.

Transfer is accepted only to the third year and on a space available basis to openings created by attrition. Application materials and further information may be obtained by writing to Admissions, School of Medicine, Medical College of Virginia, Virginia Commonwealth University, Box 565, MCV Station, Richmond, VA 23298.

CURRICULUM

The program for the M.D. degree is divided into four phases, each of a year's duration, Medicine I, occupying the first year (late August to May), emphasizes normal human structure, function, growth, and development. Medicine II, occupying the second year (August to June), stresses the abnormal. Medicine III occupies the third year (July to July) and consists of clinical education and training. The fourth year (Medicine IV), lasting from August to May, consists of approximately one-half required clinical education and training and approximately one-half electives at MCV/VCU and at approved medical schools elsewhere in the USA and abroad. Elective opportunities are offered also in M-I and M-II.

One-half to one day seminars on each of several practice-related topics are presented during the M-III year. The entire class convenes for these required sessions.

REGISTRATION IN COURSES OFFERED BY THE SCHOOL OF MEDICINE IS RESTRICTED TO STUDENTS EN-

ROLLED IN THE SCHOOL OF MEDICINE AT THE MEDICAL COLLEGE OF VIRGINIA, VIRGINIA COMMONWEALTH UNIVERSITY.

Medicine I and II

The curriculum is viewed as a dynamic and evolving entity, and course titles, content, or duration of emphasis may be subject to modification for the sake of improving the learning experience.

The subject matter of Medicine I and Medicine II is divided into body organ systems to permit integration of the basic science disciplines (anatomy, physiology, biochemistry, microbiology and immunology, pharmacology, pathology, biostatistics, and biophysics) with one another and with the clinical aspects. Behavioral science, preventive medicine, public health, cardinal manifestations of disease, and physical diagnosis are also taught in M-I and M-II.

In M-I, the organ system subject matters are

Course	Length
Cell Biology	5 Weeks
Musculo-Skeletal	8 Weeks
Gastrointestinal-Behavioral Sciences	5 Weeks
Cardiovascular	3 Weeks
Renal-Respiratory	4 Weeks
Neurosciences—Behavioral Sciences	6 Weeks
Endocrine-Reproduction	5 Weeks
Pathogenesis	2 Weeks

Each subject matter in M-I and M-II is designed and implemented by a faculty committee, and each phase of the curriculum is supervised by a faculty coordinator. In M-III a committee under a coordinator supervises the clinical experiences, and in M-IV there is an electives committee, whose chairman is the M-IV coordinator. Students serve on all committees.

In M-II, the organ system subject matters are

Course	Length
Infection and Immunity, Preventive Medicine, Pharmacology	8 Weeks
Hematology	3 Weeks
Central Nervous System	3 Weeks
Gastroenterology	4 Weeks
Behavioral Science	2 Weeks
Respiratory	3 Weeks
Cardiovascular	4 Weeks
Musculoskeletal-Skin	4 Weeks
Renal	3 Weeks

Endocrine-Reproduction	5 Weeks
Introduction to Clinical Medicine (concurrent with the above)	4 weeks

All students are required to take National Board Part I Examination.

Medicine III

Rotation	Length
Internal Medicine	12 weeks
Surgery	8 weeks
Pediatrics	8 weeks
Obstetrics-Gynecology	6 weeks
Psychiatry	6 weeks
Neurology-Neurosurgery	4 weeks
Community Practice	4 weeks
M-III Combined Workshop	1 week

All students are required to take National Board Part II Examination.

Medicine IV

The School of Medicine, in an effort to serve best the needs and goals of the individual student, offers M-IV students the option of choosing electives during two-thirds of their senior year. The elective curriculum has been arranged primarily to allow those students who have definite goals to pursue them logically without adherence to a required curriculum. At the same time, it allows those who have not yet defined their goals an adequate assortment of electives with which to explore career options. Where standard elective choices seem too limiting, students are encouraged to approach individual faculty members relative to the development of unique courses that more closely approach individual needs. The student's advisor or other faculty members are available to advise the student and to review his selections.

The year is divided into nine four-week periods, approximately one-third of which must be served in the following required rotations: emergency room, radiology, and a combination of cardiopulmonary clinical lectures and ophthalmology clinics.

A new electives catalog is published each year.

Internship Program—First-Year Post M.D. Clinical Training (Medicine V)

Approved first year post M.D. categorical training (with some flexibility) in surgery, obstetrics-gynecology, psychiatry, and anes-

thesthesiology, and categorical positions in family practice, medicine, surgery, pediatrics, pathology, neurology, and radiology are offered. Inpatient and outpatient experience, and systematic rotation through services are included in the various internship programs.

For further information and a program booklet, write Associate Dean for Graduate Medical Education, School of Medicine, Medical College of Virginia, Virginia Commonwealth University, Box 257, MCV Station, Richmond, VA 23298.

RESIDENCY PROGRAMS

A period of clinical experience in the specialty elected is a requirement for certification by the American Board of Medical Specialists. Postgraduate medical programs are offered in anesthesiology, dermatology, family practice, internal medicine, neurology, neurosurgery, obstetrics and gynecology, ophthalmology, otolaryngology and rhinology, pathology, forensic pathology, dermatopathology, pediatrics, pediatric allergy and immunology, pediatric cardiology, pediatric hematology and oncology, pediatric neurology, physical medicine and rehabilitation, public health and preventive medicine, psychiatry, radiology, diagnostic radiology, therapeutic radiology, nuclear medicine, surgery, oral surgery, orthopedic surgery, plastic surgery, urology, and thoracic surgery.

For further information contact the Associate Dean for Graduate Medical Education, School of Medicine, Medical College of Virginia, Virginia Commonwealth University, Box 257, MCV Station, Richmond, VA 23298.

CONTINUING EDUCATION

Mission Statement

The primary goal of the Office of Continuing Medical Education at MCV/VCU is to provide educational experiences specifically designed to enhance the delivery of high quality patient care by physicians and other health care professionals in Virginia and other states. The philosophy of continuing medical education is based on the belief that learning must be viewed as a lifelong process. In past generations the graduating physician was able to look upon an acquired knowledge base as a reasonably stable re-

source for practicing medicine. However, today's rapidly expanding load of scientific information forces a continuing learning effort upon the physician. Undergraduate and graduate medical education alone can no longer offer reasonable assurance, if indeed they ever could, that practitioners are armed with the knowledge, attitudes, and skills that will enable them to render optimal, achievable patient care throughout their careers. Continuing education is now linked with undergraduate and graduate education to complete the continuum of medical education.

The goal and philosophy stated herein undergird and lend direction to the effort of the Office of Continuing Medical Education as it engages in a diversity of educational and education-related activities. Specifically, the Office of Continuing Medical Education works in concert with the faculty of the School of Medicine as well as other individuals and organizations as appropriate, to

1. Coordinate a state-wide continuing medical education program for several networks of affiliate hospitals.
2. Develop and deliver a series of short courses, seminars, and conferences for physicians and other health professionals.
3. To provide and make readily available self-learning materials and methods.
4. Conduct research to improve the process of continuing medical education.
5. Improve the education of the general public in the proper use of health care resources.

Fostering an appreciation for the concept of lifelong learning in undergraduate and graduate medical school programs is a challenge that is now being confronted by medical schools throughout the nation. During these critical years the attitudes of medical students toward continuing pursuits of learning are molded and developed. In order to encourage undergraduate and graduate students at the Medical College of Virginia to embrace the concept of lifelong learning, the Office of Continuing Medical Education actively seeks their involvement in its various programs and activities. Brochures, posters, and a yearly catalogue are utilized to announce pending events.

Further information may be obtained by writing the Associate Dean for Continuing

Medical Education, School of Medicine, Medical College of Virginia, Virginia Commonwealth University, Box 48, MCV Station, Richmond, VA 23298.

ANNUAL LECTURESHIPS

The Department of Pediatrics sponsors annually a medical education program and the **Sutton Lecture** in honor of the late Dr. Lee E. Sutton, Jr., who was chairman of the department from 1938 to 1958 and dean of the medical school from 1929 to 1942.

The annual **Students Honors Day** sponsored by the American Medical Student Association and Alpha Omega Alpha, has been designated **Kinloch Nelson Medical Student Honors Day** as an expression of appreciation for the leadership Dr. Nelson provided during his tenure as dean of the School of Medicine from 1963 to 1971.

The **Sanger Lecture** was established and endowed by the late Dr. Harvey B. Haag, professor and chairman of the Department of Pharmacology and dean of the School of Medicine from 1947 to 1951, as a tribute to Dr. William T. Sanger for his dedication and service to the institution. Dr. Sanger served as president of MCV from 1925 until 1956, chancellor from 1956 to 1959, and chancellor emeritus from 1959 until his death in 1975. The lectureship annually offers topics of current interest in the area of science and religion to MCV/VCU and the Richmond community.

The annual **Charles W. Thomas Lectureship** was begun in 1971 in honor of Dr. Thomas whose bequest of one million dollars led to the establishment of the Charles W. Thomas Foundation for research and education in the area of arthritis, a disease from which he suffered. A graduate of the Medical College of Virginia, Class of 1903, Dr. Thomas was a native of Patrick County, Virginia and practiced medicine in the state for over 50 years.

In 1973, former residents in obstetrics and gynecology from the Medical College of Virginia, through their organization, the H. Hudnall Ware, Jr. Society, established the **H. Hudnall Ware, Jr. Visiting Professorship** in honor of H. Hudnall Ware, Jr., M.D., who was professor of obstetrics and gynecology from 1942 to 1967. The visiting professorship is combined with a two-day

postgraduate continuing education program which provides information regarding recent advances in obstetrics and gynecology.

The **John Hoover Moon Memorial Lectureship** was established in 1972 as a tribute to John Hoover Moon, M.D., professor of medicine, for his outstanding contribution to teaching and research. A graduate of the School of Medicine, 1949, he was the first clinical research fellow in the Division of Hematology. His research interests centered around the chemotherapy of malignant disease. The John Hoover Moon Memorial Foundation makes this annual lectureship possible.

COMBINED M.D. AND M.S. OR PH.D. PROGRAMS

The School of Medicine encourages applications from individuals interested in the combined M.D./Ph.D. program. This program provides superior preparation for a career in academic medicine or medical research. The program at the Medical College of Virginia has successfully trained independent medical research scientists and academicians.

Students interested in this combined degree program must be accepted by both the School of Medicine and one of the Ph.D. granting programs within the School of Basic Sciences. The application process is simplified by acceptance of MCAT and references and transcripts utilized in applying to the School of Medicine. Students in the combined degree program are given credit for Basic Science instructions received in the first years of medical school. Summers and elective time during these years provide excellent opportunities to begin research training. Almost the entire fourth year may be devoted to graduate school education.

The minimum requirement in addition to the first three years of medical school is one year for the M.S. and two years for the Ph.D. degree. Because the medical school curriculum provides a very broad-based background, combined-degree students are required to take few, if any introductory-level graduate courses. Graduate school courses should provide in-depth education in one discipline.

Students are advised to declare their research interest in the first academic years

because the use of elective and summer time may be critical in their individual schedules. For additional information, students may contact the Medical School Curriculum Office or the dean of the School of Basic Sciences.

GRADING AND PROMOTIONS

Each student's progress toward his objectives is evaluated in the laboratory, on clinical services, by examination upon each subject matter, and by comprehensive or national board examinations at appropriate times. Grades are assigned on the honors, pass, marginal, or fail basis. Students receiving marginal or failing grades are counseled frequently. All students are assigned a faculty advisor. This advisor is available to the student throughout his four years.

Students who have attained satisfactory grades in M-I and M-II but who do not pass National Boards Part I may receive special instruction in the basic medical sciences during the third school year, prior to their repeating the Part I examination. These students will use part of their fourth year to complete the segments omitted during the special instruction period. Those who do not show significant improvement will be reviewed by the Promotions Committee, which will formulate a plan for each student.

At the close of each academic year the Promotions Committee, composed of chairmen of departments, recommends to the dean which students have achieved the objectives of the year and are qualified for either promotion or graduation. The Promotions Committee is charged to give careful individual attention to all aspects of student achievement, effectiveness, behavior, and attitude. The committee is charged not to promote any student who has failed to meet the requirements of the preceding year, or who appears unfit for the practice of medicine. When the committee determines by majority vote that a student will not be promoted, it then recommends to the dean remedial activities or dismissal in instances where no remedy is perceived. The dean reviews the recommendations and promptly notifies students that they have been promoted, must repeat a year, or have been dismissed. A student dismissed by the Promotions Committee may apply to the dean's

office for the privilege of repeating the year in which he failed. A student repeating the year is expected to show significant improvement. The Promotions Committee will also meet each December to review the status of all senior students, all third-year M.D./Ph.D. candidates and any third-year candidates for three-year graduation. Furthermore, the committee will review any other students in serious academic difficulty and may, at this meeting, choose to take final action on such students, including dismissal.

A student may appeal a promotions decision by filing a letter of appeal with the dean within ten days of receipt of the dean's notice. An appeals committee of four senior faculty, not members of the Promotions Committee, will review the student's appeal interviewing the student along with review of other material which the committee deems useful. Their recommendation will be made to the dean, who will inform the student of the outcome of the appeal.

WITHDRAWAL

A student may not leave school prior to completion of an academic year unless granted leave of absence by the dean. A student who leaves without such permission or who fails to return by the end of his granted term of leave, is considered dismissed from his class and may return only by applying for possible readmission.

REQUIREMENTS FOR GRADUATION

The degree of Doctor of Medicine will be conferred by Virginia Commonwealth University upon candidates who, in the opinion of the medical faculty, have:

1. Attained the school's educational objectives as evidenced by satisfactory completion of prescribed courses and examinations, by proven clinical skills and responsibilities, and by ethical standards;
2. Attended the School of Medicine, Medical College of Virginia, for a minimum of two years, one of which must be an academic year of clinical rotations; and
3. Discharged all financial obligations to the university.

It is the policy of the School of Medicine

that candidates must be present at commencement exercises unless excused by the dean.

STUDENT PARTICIPATION

The dean and faculty solicit the advice of students in conducting the affairs of the medical school. Student officers elected by their classes meet for dinner quarterly with deans and curriculum coordinators. At these meetings each phase of the curriculum and any other matters of concern to students are discussed in detail. Each class also elects representatives to the faculty committees which design its curriculum. Students are selected by the dean and the faculty to serve on the Admissions Committee, on faculty tenure committees, and on committees to recommend appointment of deans. A continuing effort is made to improve methods for student evaluation of teaching technique. All students are welcome to visit the deans, teachers, and faculty advisors at any time to volunteer opinions or seek explanations of procedures employed by the school.

STUDENT FELLOWSHIPS

Opportunities are available for study and investigation under the tutelage of faculty members in their laboratories during the summer vacation and as an extracurricular activity during the school year.

These studies are supported by the A. D. Williams fellowship endowment with selections made by the A. D. Williams Committee on the recommendations of the Institutional Research Advisory Committee. Selections for project grant funds are made by the principal investigators.

The Robert C. Bryan Summer Fellowship in Pathology has been given by Mr. Jonathan Bryan in memory of his father.

The Arthur T. Lyman Fellowship in pathology is awarded to an outstanding student participating in the summer fellowship program. This represents a gift from Mrs. Fairfield Goodale in memory of her father who, though a layman, had considerable interest in medical education. The recipients of these fellowships are chosen by the Department of Pathology.

FINANCIAL ASSISTANCE

A brief description of financial aid based

on demonstrated need is contained in Part I of this bulletin. Financial need-based aid programs available to medical students include National Direct Student Loan, State Family Medical Scholarship, Norfolk Foundation Scholarship, Lincoln/Lane Foundation Scholarship and various institutional loans and grants.

Information on the State Family Medical Scholarship may be obtained from the School of Medicine; information on the other programs is available from the MCV Financial Aid Office.

National Health Service Corps (NHSC) Scholarship

The U.S. Public Health Service provides for up to four years' paid tuition and fees, book and supplies allowance and a monthly stipend in exchange for fulltime clinical practice in the National Health Service Corps. Normally the recipient serves one year for each year of scholarship, with a minimum of two years of obligation. Selections will be made by NHSC prior to August 1. For current information, write:

NHSC Scholarship Program, Center Building, Room 5-44, 3700 East-West Highway, Hyattsville, Maryland 20782. Telephone inquiries may be made via the toll free number, (800) 638-0824.

U.S. Armed Forces Scholarships

The Army, Navy, or Air Force provides up to four years of paid tuition and fees, book and supplies allowance, and a stipend in exchange for military service after graduation. Normally the recipient serves one year on active duty for each year of scholarship, with a minimum of three years. Additional information may be obtained from local armed services recruiting offices.

HONORS AND PRIZES

Student research and honors day is held in May. Begun by the American Medical Student Association, it is now a joint effort of that organization, the Alpha Omega Alpha honorary scholarship fraternity, and the medical school. Honors and prizes in the medical school include:

Alpha Omega Alpha. The Brown-Sequard Chapter, established at MCV in 1940, elects to membership each year senior and junior

students who have demonstrated outstanding academic achievement as evidenced by cumulative ranking in the upper one-fourth of the class. Membership is limited to a maximum of one-sixth of each class.

Sigma Xi. Seniors of high scholastic achievement, who show promise of success in research, may be elected to associate membership in the VCU chapter of this national honorary scientific society.

Sigma Zeta. Outstanding members of the junior and senior classes of the Schools of Medicine, Dentistry, Pharmacy, and Nursing are elected to this honorary scientific society.

L. Beverly Chaney Scholarship. For responsible leadership during the first three years of medical school, a senior scholarship of \$1,500 from the Joseph Collins Foundation in memory of its trustee, Dr. Chaney, who graduated from the School of Medicine in 1918.

Merck Company Foundation Scholarships. Eight scholarships of approximately \$1,000 awarded by the Merck Company Foundation to students with superior academic performances.

The Upjohn Prize. A plaque and \$150 awarded by the Upjohn Company to the senior student chosen by his classmates as the most outstanding in scholarship and leadership.

The Roche Prize. An Omega watch to the student achieving the highest score on Part I of National Board Examinations.

William Branch Porter Stethoscope. A silver replica of the stethoscope given by Sir Thomas Lewis to Dr. Porter, professor of medicine from 1928 to 1956, is awarded to a senior student for outstanding achievement in internal medicine.

Isaac A. Bigger Medal. A medal awarded annually to a surgical resident for integrity, leadership, teaching, and clinical ability, in memory of Dr. Bigger, professor of surgery from 1930 to 1955.

Lee E. Sutton, Jr. Prize. Awarded to a senior student for excellence in pediatrics, in memory of Dr. Sutton, professor of pediatrics from 1938 to 1958, and dean from 1929 to 1942.

Robert C. Bryan Prize. For excellence in sophomore pathology, an annual award of \$50 in memory of Dr. Bryan, professor urology from 1917 to 1934.

Aubrey H. Strauss Prize. For excellence in sophomore microbiology, an annual award of \$75 in honor of Dr. Strauss, assistant professor of microbiology from 1909 to 1924.

Hjalmar L. Osterud Prize. For excellence in freshman anatomy, \$75 awarded annually to a medical or dental student in memory of Dr. Osterud, professor of anatomy from 1922 to 1953.

Outstanding Pathology Graduate Student. A prize of \$125 is awarded to the pathology graduate student showing the most promise of success in research.

A. D. Williams Award. Awards are made to students in the first three years of medical school for outstanding academic performances.

Ciba Award. A set of Netter Atlas volumes awarded to the sophomore student who has demonstrated the most beneficial extracurricular activity within the community.

Departments and Divisions of Instruction

DEPARTMENT OF ANESTHESIOLOGY

Professors: Keenan (Chairman); Boyan; Jones; Muren; Raffii; Schettini
 Clinical Professor: Chun
 Associate Professors: Aghdami; Campbell; Kallar; Kane; Lewelt; Price; Rah
 Associate Clinical Professors: Baird; Harris, C.
 Assistant Professors: Cason; Chen; Ellis; Fabian; Harrison, R.; Kim; Nakatsuka; Singh; Stewart
 Assistant Clinical Professors: Chu; Feria; Hranowsky; Pinsker
 Instructors: Jesudian, Rein; von der Gruen

DEPARTMENT OF DERMATOLOGY

Professors: Blaylock (Chairman); Jordan, W.
 Clinical Professors: Manson; McMullan; Murrell; Pepple; Scoggins; Trice
 Associate Professors: Patterson, J. W.; Wilkin
 Associate Clinical Professors: Booth; Caravati; McMullan
 Assistant Clinical Professors: Black; Hudgins; Kelly; Reams, W.
 Instructor: Kitces
 Clinical Instructors: Blackmore; Blanchard; Fohl; Knight; Reams, B.T.; Young, E.
 Lecturer: Murray

DEPARTMENT OF FAMILY PRACTICE

Professors: Mayo (Chairman); Kilpatrick; Marsland; Wood, M.

Clinical Professor: Harris, J. L.

Associate Professors: Jacoby; Munson, P.

Associate Clinical Professors: Charlton; Delsordo; Devlin; DeWitt; Gilliam; Harris, A.; Harris, J. S.; Kelsey; Mapp; Mitchell; Overton; Quinnell; Smith, R.; Stallings; Temple; Vickery; White

Assistant Professor: Horvathich

Assistant Clinical Professors: Ball; Beirne; Bremer; Brillhart; Buston; Cametas; Carter; David; Farrell; Felton; Foos; Goldman; Gorman; Harrison, H. T.; Horne; Kentigh; Kraus; Krop; Layman; Lewis; Lowery; McCarrick; Merrill; Moseley; Muffelman; Nichols; Morrisette; Norfleet; Nuckols; Oglesby; Owen, J. T.; Royal, F.; Satchwell; Sim; Skaggs; Solan, Spence; Sutton; Turner; Weathington; Weger; Williams, R. B.; Wise; Youngblood; Zakaib

Instructor: Mosteller

DEPARTMENT OF INTERNAL MEDICINE

Professors: Fallon (Chairman); Blackard; Duma; Eckberg; Falls; Farrar; Glauser; Goldman, I. D.; Hess; Holsinger; Irby, W. R.; James, G. W., III; Kelly, J. J., III; Kontos; Makhoul; Mauck, H. P.; Mellette; Moore, E. W.; Mullinax; Muren; Nance; Oken; Owen; Patterson; Porter; Raper; Regelson; Richardson; Romhilt; Ruddy; Scott, R. B.; Shadomy, S.; Sharpe; Steinfeld; Swell; Thames; Tikoff; Toone; Tucker, St. G.; Vlahcevic; Waller; Wasserman; Watlington; Weir; Witherspoon; Zfass

Clinical Professors: Carter, W.; Blanton; Freund; Klein; Williams, C.

Visiting Professor: Correia

Associate Professors: Archer; Brummer; Carithers; Cushman; Dabney; Diasio; Elson; Fratkan; Guzelian; Haden; Hassan; Hastillo; Kirschbaum; Lamb; Landwehr; Lerner; Littman; Mayhall; Millen; Pears; Proctor; Qureshi; Schwartz; Shadomy, H.; Smith, W. K.; Sowers; Stacy; Switz; Vetrovec; Wampler; Wingo; Zawada

Associate Clinical Professors: Bernart; Blount; Burton; Clark, F. A., Jr.; Greenberg; Holland; Kemp; Kollar; Kuperminc, M.; McCue, H.; McGehee; Owens; Smith, Wm.; Sutphin; Zieve

Assistant Professors: Adler; Arthur; Barrett; Buchsbaum; Burke, J.; Centor; Chan, C-W; Cooper, K. R.; Cowley; Dunnington, J.; Fair-

ly; Fairman; Fowler; Gardner; Gewirtz; Goodman, R.; Grady; Hirsh, P.; Hornbuckle; Hylemon; Jacobson; Kaplowitz, L.; Kerker; T.; Kronfol; Lewis, S. A.; Link, K.; Markowitz; May; Mohanty, P.; Monroe; Moore, R. P.; Morley; Morrow; Paulsen; Perry; Robinson; Saffouri; Sagar; Sica; Steinke; Suter; Thompson, J. A.; Tucker, H. St. G., III; Vishniavsky; Wolper; Yanovich; Yarborough

Assistant Clinical Professors: Baskerville; Baylor; Becker; Bedinger; Black; Burke; Buxton; Cader; Clarke, M.; Deep, W. D.; Doyle; Dunnington, G.; Fitzgerald; Goldman, S. A.; Grinnan; Halloran; Harris, W. H., Jr.; Henley; Higgins; Hoyt; Hughes, D.; Jessee, F.; Kahn; Lee; Levy; MacMillan; Martin, W. W., Jr.; Mathews, E. C.; McIntyre; Miller, G.; Miller, M. J.; Monahan; Morey; Nuara; O'Brien; Phillips, C.; Price, C.; Reed; Speckhart; Sporn; Starkman; Steinberg; Stith; Strachan; Thornton; Titus; Vaughan; Vilseck; Weisiger; Williams, R. O.; Zacharias, C.

Research Assistant Professors: Musgrave; Wrighton

Visiting Assistant Professor: Ash

Clinical Associates: Bailey; Budd; Buis; Bullock; Dingleline; Hecht; Irby, E. C.; Markham; McEntee; McKeown; Mitchell, R. E., Jr.; Regan; Rose; Wingfield

Instructors: Bechard; Chasen; Forbes; Franks; Fry; Giessel; Harford; Levine; Marland; Moxley; Nayfield; Nestler; Polk; Sobieski; Vitaliti; Watkins; Willis; Wolfert

Clinical Instructors: Ansell; Ashworth; Davis, T. D., Jr.; Drake; Elliott; Gayle, S. W.; Glazier; Hall; Key; Kroll; Kyle, M.; Kyle, T.; Lamb; Leahy; Longacher; Newman; Nottingham; Parker, C.; Parker, V.; Poindexter; Pollock; Pritchard; Qaiyumi; Seeman; Smith, R.; Tucker, S. C.; Tucker, W. T.; Wickham; Wootton; Zacharias, L.

Division of Cardiopulmonary Laboratories and Research

Professors: Kontos (Chairman); Mauck, H. P.; Patterson, J. L.

Division of Cardiology

Professors: Richardson (Chairman); Eckberg; Hess; Holsinger; Porter; Raper; Romhilt; Thames

Associate Professors: Cowley; Hassan; Hastillo; Vetrovec

Assistant Professors: Grady; Hirsh, P.; Lewis, S. A.; Mohanty; Paulsen; Robinson; Sagar; Steinke

Division of Clinical Pharmacology

Professor: Wasserman (Chairman)
Associate Professor: Proctor
Assistant Professor: Wright, J.

Division of Clinical Toxicology and Environmental Health

Professor: Guzelian (Chairman)

Division of Endocrinology and Metabolism

Professors: Blackard (Chairman); Sharpe;
Tucker, St.G.; Watlington; Weir
Associate Professors: Fratkin; Sowers
Assistant Professor: May

Division of Gastroenterology

Professors: Vlahcevic (Chairman); Farrar;
Makhlouf; Moore; Swell; Zfass
Associate Professors: Carithers; Elson;
Schwartz; Switz
Assistant Professors: Saffouri; Schulbert;
Wolper
Instructor: Sobieski

Division of Hematology

Professors: James, G. W., III (Chairman); Scott,
R. B.
Associate Professors: Dabney; Haden; Qureshi;
Zawada
Assistant Professors: Tucker, St.G., III

Division of Immunology and Connective Tissue Disease

Professors: Ruddy (Chairman); Irby, W. R.;
Mullinax; Owen; Toone; Waller
Associate Professor: Littman
Instructors: Moxley; Willis

Division of Infectious Disease

Professors: Duma (Chairman); Shadomy, S.
Associate Professors: Archer; Brummer;
Markowitz; Mayhall; Shadomy, H.
Assistant Professors: Jacobson; Kerkerling, T.;
Vishniavsky

Division of Medical Oncology

Professors: Goldman, I. D. (Chairman);
Mellette; Regelson; Steinfeld
Associate Professors: Diasio; Smith, W. K.;
Wampler
Assistant Professors: Hall; Hornbuckle;
Yanovich
Instructors: Fry; Nayfield

Division of Nephrology

Professors: Oken (Chairman); Falls
Associate Professors: Kirschbaum; Landwehr;
Stacy
Assistant Professors: Dunnington, J.; Kronfol;
Sica
Instructors: Harford; Wolfert

Division of Primary Care and General Medicine

Professor: Witherspoon (Chairman)
Associate Professor: Pears
Assistant Professors: Buchsbaum; Burke; Cen-
tor; Chan, C-W; Gardner; Goodman, R.;
Kaplowitz, L.; Link; Perry; Suter; C. F.;
Yarborough
Instructor: Forbes

Division of Pulmonary Disease

Professors: Glauser (Chairman); Muren
Associate Professors: Millen, J.; Wingo
Assistant Professors: Cooper; Fairman; Fowler;
Moore, R.; Morley; Morrow
Instructor: Giessel

DEPARTMENT OF LEGAL MEDICINE

Professor: Wiecking (Chairman)
Associate Professors: Fierro, M.; Valentour
Assistant Professor: Ross
Lecturers: Bernd; Beyer; Crews; Dunn, S.H.;
Fauss; Handcock; Massello; Oulton; Oxley;
Page; Presswalla; Russell; Sartoris; Scott,
R.C.; Thornhill

DEPARTMENT OF NEUROLOGY

Professors: Suter, C. G. (Chairman); Harbison;
Henry; Vines
Clinical Professors: Rennie; Richards; Tucker,
W. M.
Associate Professors: Calabrese; Leshner; Myer;
Selhorst; Taylor
Associate Clinical Professors: Harrelson; McGee
Assistant Professors: Campbell, W. W.; Cohen,
R. J.; Hormel; Howell; Isrow; Ochs; Pellock;
Waybright
Assistant Clinical Professors: Brush; Harris, W.
O.; Isaacs; O'Bannon
Instructor: Wilson, J.T.
Clinical Instructors: Atkinson; White, R.J.

DEPARTMENT OF OBSTETRICS AND GYNECOLOGY

Professors: Dunn (Chairman); Board; Brown, J.;
Gopelrud; Hurt

Associate Professors: Cruikshank; Petres
 Associate Clinical Professor: Claiborne
 Assistant Professors: Bennett, E.; Bhatnagar;
 Cohen, S.; Dineen; Fantl; Gentile; Krebs;
 Redwine; Rosenberg; Wetchler
 Assistant Clinical Professors: Feore; Fierro, R.;
 Howren; Jarrell; Moore, W. T.; Williams, L.
 H.
 Instructor: Hays
 Clinical Instructors: Battista; Blanton, E.;
 Boone; Broocker; Cornell; Crooks; Deep, A.;
 Eggleston; Fitzhugh; Forrest; Gospodnetic;
 Grizzard; Hamilton; Johnson; Keblusek;
 Klink; Maizels; Minor; Montague, D.; Moore,
 C.; Moseley; Oppenheimer; Partridge; Payne;
 Rabhan; Radford; Ruhnke; Shaughnessy;
 Spirn; Tomlin; Ware, H. H., III; Wiggins

DEPARTMENT OF OPHTHALMOLOGY

Professors: Ferry (Chairman); Harbison; Madge;
 Nooney
 Clinical Professors: McNeer, K.; Smith, M.;
 Weisinger
 Associate Professors: Geeraets; Selhorst;
 Weinberg
 Associate Clinical Professors: Blair; King, R. G.,
 Jr.; Mayer; Sheppard; Stratford; Wyatt
 Assistant Professors: Abedi; Combs; Waybright;
 Zaidman
 Assistant Clinical Professors: Brown; Bunting;
 Caldwell; Conrad, F.; Davis, F. S.; duPrey;
 Gazala; Guerry, R.; Jacey; MacMillan;
 McNeer, P.; Miller, C.; Morgan; Volk
 Instructor: Porter, E.
 Clinical Instructors: Bullock; Bundy; Dabney,
 T.; Harkrader; Heyner; Sakowski; Smith, L.
 T.

DEPARTMENT OF OTOTOLOGY, RHINOLOGY, AND LARYNGOLOGY

Professor: Williams (Chairman)
 Clinical Professors: Hayden; Smith, M. P.
 Associate Professors: Flowers; Frable, M. A.;
 Lenhardt
 Associate Clinical Professor: Cross
 Assistant Professors: Abedi, E.; Butts; Gior-
 dano; King, M.D.; Sismanis
 Assistant Clinical Professors: Atiyeh; Gill, J. A.;
 Hulcher; Middleton; Montague; Shaia
 Clinical Instructors: Archer; Clarke; Dodd;
 Fischer; Hecker; Isaac; Kreisler; Ryals; Shim;
 Wilkes; Williams, M.
 Clinical Associate: Creech

DEPARTMENT OF PATHOLOGY

Professors: Vennart, (Chairman); Blanke;

Dalton; dos Santos; Draper, D.; Duma;
 Elzay; Escobar; Ferry; Fisher; Frable, W.;
 Gander; Gerszten; Ghatak; Gruemer;
 Hadfield; Hossaini; James, G. W., III;
 Johnston; Kohout; Madge; Monroe; Moore;
 Rosenblum; Salley; Schatzki; Scott, R. B.;
 Shiel; Still; Waller
 Clinical Professors: Biro; Borland; Carroll;
 Thornton
 Associate Professors: Fierro; Hard; Lim; Loria;
 Mayhall; Moncure; Nakoneczka; Patterson,
 J.W.; Qureshi; Valentour
 Associate Clinical Professors: Beck; Briere;
 Clark, R. F.; Goodwin; Griffin; Hershberg;
 Kramer; McGehee; McMullan
 Assistant Professors: An; Behm; Cook, S.;
 Cross; DeMay; King, M. E.; Lynch; Miller;
 Mohanty, L.; Schneider; Sharp
 Assistant Clinical Professors: Armstrong; Bud-
 dington; Gutierrez; Hoke; Kipreos; Klimock;
 Lovering; Pinto; Sawyer; Smith, G. E., Jr.;
 Thomas, C.; Thomas, G.
 Instructor: Mills
 Clinical Instructor: Sylvest

DEPARTMENT OF PEDIATRICS

Professors: Maurer (Chairman); Chan; Draper,
 D. A.; Hazra; Kendig; Mauck, H. P.;
 Marsland; McCue, C.; Miller; Nance, Ownby;
 Salzberg; Schieken; Young
 Clinical Professors: Arnold; Bundy
 Associate Professors: Berman; Brookman;
 Bruch; Campbell; Garrettson; Kirkpatrick;
 Kodroff; Leshner; McWilliams; Mickell;
 Robertson; Rodriguez; Roth; Spencer, W. P.;
 Wolf; Zanga
 Associate Clinical Professors: Bright; David, R.;
 de la Burde; Edmonds; Hudgens; Massie;
 Weinstein
 Assistant Professors: Adler; Broecker; Cockrell;
 Dunn, N; Fosarelli; Graham, M.; Kaplowitz,
 P.; Kerker; Markowitz, P.; Mueller;
 Pellock; Rizzo; Russell; Snead
 Assistant Clinical Professors: Andrews; Austin,
 L. A.; Blumberg; Bones; Burch; Caldrony;
 Davidow; Fidler; Hanzel; Hazra, M.; Her-
 man; Jaffee; Johnston; Kannan; Kellett; Kir-
 chmair; Leverty; Liner; Mistr; Mollen;
 Moore, F. P.; Overton; Payne; Pinkerton;
 Prince; Rahal; Reams, P.; Robinson;
 Rivadeneira; Solomon; Summers; Wells;
 Wiley
 Clinical Associates: Curry; Davis, E. G., Jr.;
 Dwyer; Lindemann; Thompson; Wilkerson
 Clinical Instructors: Abernathy; Alpern; An-
 drako, J. D.; Arkin; Austein; Barringer; Bell;
 Boatwright; Brennan; Hitchcock; Jamison;
 Jones, J.; Kern; King, A.; Kuperminc; Lee, R.
 M.; Lum; Mohagheghi; Shayne

Division of Pediatric Cardiology

Professors: Schieken (Chairman); Mauck, H. P.;
McCue, C.; Miller, W. W.
Associate Professor: Robertson

DEPARTMENT OF PREVENTIVE MEDICINE

Professors: Spencer, F. J.; (Chairman); Jessee
Clinical Professors: Nemuth; Schiffrin
Associate Professors: Brummer; Peeples
Associate Clinical Professor: Moore
Clinical Instructors: Kenley; Price; Wood, R.

DEPARTMENT OF PSYCHIATRY

Professors: Friedel (Chairman); Arginteanu;
Falck, H.; Goldberg, S.; Narasimhachari;
Prevost
Clinical Professors: Christian, C.; Foster;
Morgenstern; Silberman
Associate Professors: Batchelder; Butcher; Cor-
azzini; Cushman; Harkins; Harris, L. M.;
Mullaney; Resnick; Schumann; Shenoy;
Silverman, J. J.
Associate Clinical Professors: Corcoran; Draper,
W.; Friedenberg; Gomez; Griffin; Hauser;
King, J.; McDonough; Meiller; Polin;
Schmidt; Williams, R. K.
Assistant Professors: Boon; Culbert; Destounis;
Ettigi; Falck, R.; Forbes, R.; Gleason; Hamer;
Hart, H.; Hart, R.; Hoffman; Julius; Kwen-
tus; Levinson; Parham; Peed; Reid; Schulz;
Shepard, W.; Sitarz; Snead; Tilley; Weber
Assistant Clinical Professors: Armstrong;
Carter; Erfe; Fisher, D. G.; Garcia; Gundler;
Holland, H.; Hulbert, M.; Jones, D.; Joseph;
Kemp; Kriegman, L.; Lindemann;
Makarowsky; Masri; Nelson, B. W.;
Schlobohm; Schulman; Solomon; Tingley;
Vitols, M.; Wouters
Instructors: Adkins; Atri; Bloom; Christian, F.;
Dorey; Feuer; Johnson; Kritkauskay; Stauffer
Clinical Instructors: Bick; Binford; Brooks, K.;
Dowdy; Garten; Hudson, J.; Hulbert, D.;
Kernodle; Kowler; Little, V.; Master; Mc-
Crarey; McLaughlin; Morris, H.; Nalls;
Nemuth, P.; Nunez; Reif; Russell; Sellman;
Spainer; Spector; Splane; Torres-Lisboa;
Vitols, E.; Zaller

Division of Child Psychiatry

Professor: Friedel (Acting Chairman)
Associate Professor: Batchelder
Assistant Professors: Boon; Parham; Reid;
Sitarz; Snead
Instructor: Stauffer

Division of Clinical Psychology

Professor: Arginteanu
Associate Professors: Resnick (Chairman);
Schumann
Assistant Professors: Hart, H.; Peed
Instructors: Bloom; Christian, F.

Division of Consultation/Liaison Psychiatry

Associate Professor: Silverman, J. (Chairman)
Assistant Professors: Culbert; Hart, R.

DEPARTMENT OF RADIOLOGY

Professors: Kishore (Acting Chairman); Beachley;
Eisenberg; Fratkin; Goodman; Hazra; Hut-
ton; Merz; Neal; Nooney; Rao, G.; Sharpe;
Vines; Yaghmai
Clinical Professor: Cimmino
Associate Professors: Belgrad; Brewer; Cho;
Eisert; Fields; Floyd; Haden; Hirsch;
Kodroff; Lipper; Montour; Strash; Tatum;
Tisnado; Turner; Walsh; Wilson
Associate Clinical Professors: Bassham; Fitch;
Howell; Lundeen; Myles; Rogers; Talley;
Vinik; Walker
Assistant Professors: Ali; Bosch; Broga;
Fatouros; Henry; Howells; Messmer; Rao;
Resnick, C.; Vick; Woodlief
Assistant Clinical Professors: Bredrup; Burke,
A. W.; Cabrera; Calkins; Faunce; Galston;
Girevendulis; Hughes; Hulick; King, D.;
Konerding; Roberts; Savage; Southworth;
Theus; Wadsworth
Instructors: Alford; Burke, T.; Hartenberg; Jani
Clinical Instructors: Bentley; Calvalcanti; Shaw;
Shivel; Spencer, H. S.; Wassum; Williamson;
Winkler

Division of Diagnostic Radiology

Professors: Vines (Chairman); Beachley;
Eisenberg; Goodman; Hutton; Kishore; Neal;
Yaghmai
Associate Professors: Brewer; Cho; Fields;
Floyd; Haden; Kodroff; Lipper; Tisnado;
Turner; Walsh
Assistant Professors: Bosch; Henry; Messmer;
Rao; Resnick, C.; Vick; Woodlief
Instructors: Alford; Burke, T.; Hartenberg

Division of Nuclear Medicine

Professors: Fratkin (Chairman); Sharpe
Associate Professors: Hirsch; Tatum

Division of Radiation Physics

Professors: Rao, G. (Chairman); Nooney

Associate Professor: Strash
 Assistant Professors: Broga; Fatouros; Howells
 Instructor: Jani

Division of Radiation Therapy and Oncology

Professor: Hazra (Chairman)
 Associate Professors: Belgrad; Eisert
 Assistant Professor: Ali

Division of Radiobiology

Professor: Merz (Chairman)
 Associate Professors: Montour; Wilson

DEPARTMENT OF REHABILITATION MEDICINE

Professor: Mellette (Acting Chairman)
 Clinical Professor: Park
 Associate Professors: Cohen, C.; LaFratta
 Assistant Professors: Bonner; Diehl, L.; Jena;
 Kallar, B.; Lamb; Peck
 Instructors: Bayer; Franco; Karagah
 Clinical Instructor: Decker

DEPARTMENT OF SURGERY

Professors: Greenfield (Chairman); Banks;
 Barnes; Becker; Brooks, J. W.; Cohen, I.K.;
 Harbison; Haynes; Horsley; Koontz;
 Lawrence; Lee, H. M.; Lower; Marmarou;
 McGuire; Newsome; Salzberg; Smith, M. J.
 V.; Theogaraj; Ulmer; Young, H.
 Clinical Professors: Carpenter; Clary; Coleman,
 C. L.; Cox; Deyerle; Gwathmey; Hill;
 Hoover; Johns, T.; Kaplan; Markowitz, M.;
 McDowell; Troland; Williams, C.; Zimberg
 Associate Professors: Adelaar; Campbell;
 Cardea; Diegelmann; Fonseca; Guisto;
 Hackler; Hussey; Maull; Mendez-Picon; Mer-
 ritt; Mohanakumar; Selhorst; Silverman, J.;
 Sugerman; Szentpetery
 Associate Clinical Professors: Atwill; Banner;
 Bryson; Carter; Conquest; Davis, R. K.; Dod-
 son; Harrison; Hill; Natvig; Nevin; Oates;
 Royster; Ware, J. L.; Williams, A. M.
 Assistant Professors: Broecker; DeWitt; Ducey,
 K.; Ellis, T.; Foster; Giglio; Goldman,
 M. H.; Hayes, R. L.; Jenkins; Katz; Klein;
 Lutz; Mehrhof; Muizelaar; Nogi; Parker;
 Susskind; Ward; Wolfgang
 Assistant Clinical Professors: Beazley; Brown,
 P.; Burger; Butterworth, J. F.; Butterworth,
 T. R.; Caspari; Dalton; Darden; Doss; Drum-
 mond; Eagles; Evans, M.; Gardner; Gayle,
 W.; Hakala; Halloran; Heiman; Holcomb;
 Hulvey; Hatcher; Jackson; Kell; Kendrick;
 Knaysi; Larson; Mauck, W. R.; May;

Nachman; Olshansky; Packer; Petty; Pole;
 Poulosi; Rawls; Riley; Robertson; Rowe;
 Selph; Singer; Stalker; Stuart; Talman; Tun-
 ner; Wright; Yancey
 Clinical Associates: Byrd; Gianoulis; Herring;
 Jones, W. R., Jr.
 Instructors: Appelberg; Chandraskhar; Chang;
 Crawford; Miller; Prendergast; Rittgers;
 Whitley
 Clinical Instructors: Anthony; Bigley; Boone;
 Bowman; Boyer; Carrigan; Christie;
 Clements; Concodora; Crosier; Daniel;
 Davidson; Duck; Feminella; Frederick; Gaert-
 ner; Haines; Henceroth; James, C. M.;
 Johnson, G. W.; Johnstone; Jones, S. H.;
 Kyles; Lublin; Macys; Melzig; Meyers;
 Pilcher; Rabhan; Rowland; Seitz; Velo;
 Watkins; Whipple; White, W.; Wilson, H.H.,
 Jr.

Division of Neurological Surgery

Professor: Becker (Chairman); Harbison; Mar-
 marou; Ulmer; Young, H.
 Associate Professor: Selhorst
 Assistant Professors: DeWitt; Hayes, R. L.;
 Jenkins; Lutz; Muizelaar; Ward

Division of Surgical Oncology

Professors: Lawrence (Chairman); Horsley
 Associate Professor: Neifeld
 Assistant Professors: Parker; Susskind

Division of Orthopedic Surgery

Associate Professors: Cardea (Chairman);
 Adelaar; Hussey
 Assistant Professors: Foster; Nogi
 Instructor: Crawford

Division of Pediatric Surgery

Professor: Salzberg (Chairman)

Division of Plastic and Reconstructive Surgery

Professors: Cohen, I.K. (Chairman); Theogaraj
 Associate Professors: Diegelmann; Merritt
 Assistant Professor: Mehrhof
 Instructor: Chandraskar

Division of Cardiac and Thoracic Surgery

Professors: Lower (Chairman); Brooks, J. W.;
 Greenfield
 Associate Professor: Szentpetery
 Assistant Professors: Ducey; Wolfgang
 Instructor: Chang

Division of Trauma and General Surgery

Professors: Newsome (Chairman); Haynes; McGuire
Associate Professors: Guisto; Maull; Sugerman
Instructors: Appelberg; Miller; Whitley

Division of Vascular and General Surgery

Professors: Lee, H. M. (Chairman); Barnes
Associate Professors: Fonseca; Mendez-Picon; Mohanakumar
Assistant Professor: Goldman
Instructor: Rittgers

Division of Urology

Professors: Koontz (Chairman); Smith, M. J. V.
Associate Professor: Hackler
Assistant Professors: Broecker; Katz; Klein

BASIC SCIENCES—Basic science courses are incorporated into the curriculum of the medical students. For details on courses and faculty in the Departments of Anatomy, Biochemistry, Biostatistics, Human Genetics, Microbiology and Immunology, Pharmacology and Physiology and Biophysics, see Part VI, School of Basic Sciences.

GRADUATE PROGRAM IN PATHOLOGY

The Department of Pathology of the School of Medicine offers the Master of Science and Doctor of Philosophy degrees. Requirements for admission and academic performance are the same as for graduate programs in the School of Basic Sciences.

Graduate Offerings (PAT)

509 Basic Immunohematology. Semester course; 3 lecture hours. 3 credits. A study of the blood groups in man, their mode of inheritance, and clinical significance. Pertinent laboratory exercises will be carried out in the blood bank.

510 Basic Clinical Immunohematology. Semester course; 4 lecture hours. 4 credits. Prerequisite: PAT 509 or permission of instructor. Indications for the transfusion of blood, blood components, and derivatives. Laboratory experience related to the collection and storage of blood, blood components, and blood derivatives.

513 Blood Banking Laboratory. Semester course; 8 laboratory hours. 4 credits. Prerequisite: PAT 509. The laboratory is devoted to exercises in blood grouping, typing, genotyping, antibody screening, antibody iden-

tification, detection of Australia antigen (HAA), and the collection of blood from normal donors.

515 Problems in Neuroscience. 3 lecture hours. 3 credits. I. This multidisciplinary pathology/neuroscience course is designed to provide graduate students, residents, and fourth-year medical students with a broad, updated, and integrated overview of neuropathology and the other neurosciences. Basic molecular and cellular principles of neurobiology are brought to life by selected clinical correlations and applications. The lectures introduce major CNS pathways and systems in conjunction with basic and advanced neuropathological principles. The disease topics are cohesively taught from several points of view by specialized faculty drawn from many departments, clinical and basic.

521 Clinical Chemistry. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. Principles and applications of automation and instrumentation to the analysis of biological fluids in health and disease. May be repeated up to 12 SH.

522 Clinical Chemistry. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. The metabolic basis of disease and the interpretation of laboratory data for diagnosis and patient management. May be repeated up to 12 SH.

530 Clinical Immunopathology. Semester course; 2 lecture and 6 laboratory hours. 5 credits. Prerequisite: MIC 506 or equivalent. Application of immunologic methods to disease diagnosis and management with emphasis on immunopathogenetic mechanisms of organ systems: endocrine, lympho-reticuloendothelial, renal, gastrointestinal, cardio-pulmonary, skin, neurologic, etc. Technical aspects of testing, test interpretation and clinical case presentations will be intermingled to provide a comprehensive understanding of clinical immunopathology and its role in patient care.

590 Experimental Pathology Seminar. Semester course; 1 lecture hour. 1 credit.

601 General Pathology (Dentistry). Semester course; 3 lecture and 6 laboratory hours. 6 credits. Instruction in the basic principles regarding alteration of structure and function in disease and in the pathogenesis and effect of disease in the various organ systems.

602 Experimental Pathology of Infectious Disease. Semester course; 2 lecture and 6 laboratory hours. 5 credits. Autopsies and histopathology are studied to acquaint the graduate student with infectious disease pathology. Various animal and other models are used to demonstrate pathogenesis of some infections and other inflammatory mechanisms.

606 Biochemistry of Disease. Semester course; 2 lecture hours. 2 credits. Prerequisites: BIC 503. A detailed study of the biochemical mechanisms involved in the pathogenesis of certain diseases.

610 Physiology of Blood Coagulation. Semester course; 1 lecture and 4 laboratory hours. 3 credits. Prerequisites: BIC 503 and PIO 502. The historical development of bleeding and clotting disorders with current diagnostic methodology and treatment.

612 Viral Immunohistopathology and Serodiagnosis. 3 lecture and 4 laboratory hours. 5 credits. Prerequisite: MIC 502. In-depth treatise of immunologic and immunopathologic mechanisms of viral diseases, focusing on organ systems: neurologic, immunologic, hematopoietic and lymphatic, gastrointestinal, cardiopulmonary, dermatologic, genitourinary, etc. Findings based on histopathology and immunocytochemistry, using the latest clinical laboratory methods, will be applied to diagnosis and management of the patient with acute, latent or chronic viral infection. Technical aspects of methodology, test interpretation on the basis of clinical information, and clinical case presentations in the actual hospital setting will be intermingled to provide a comprehensive understanding of diagnostic virology and its role in patient care.

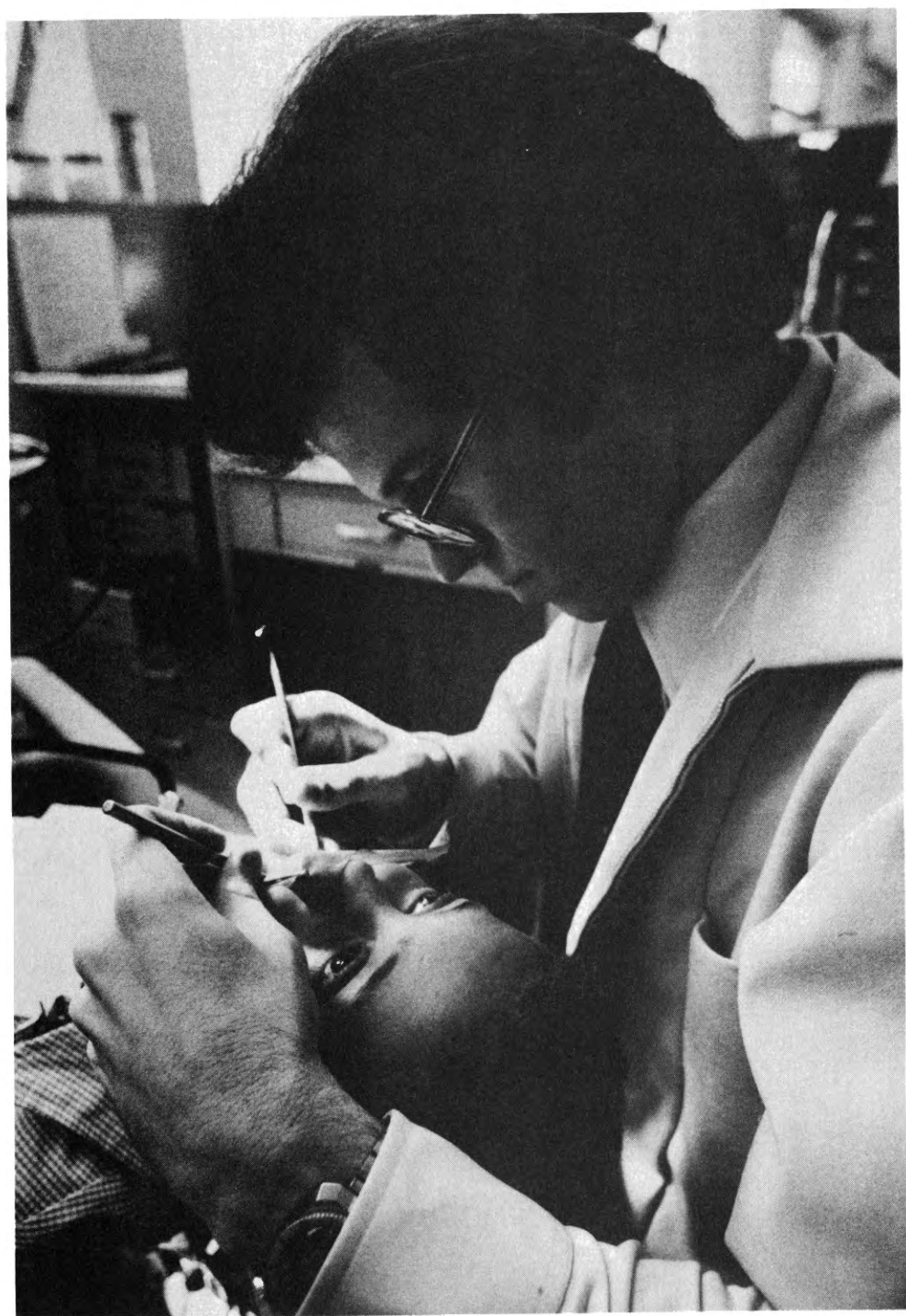
614 Pathogenesis of Infectious Disease (Bacterial Agents). Semester course; 2 lecture and 4 laboratory hours. 4 credits. Prerequisite: MIC 515 or equivalent. Emphasis is on the pathogenesis and epidemiology of

infectious disease. The dynamic interaction between the host, microorganism, and environment are documented using the data obtained from MCV Hospitals. Students have the opportunity to apply laboratory data and techniques to present microbiological problems in clinical areas.

690 Clinical Chemistry Seminar. Semester course; 1 lecture hour. 1 credit. Graduate students, residents, and staff present topics of current interest in clinical chemistry.

691 Special Topics in Modern Instrumental Methods. Semester course; 2 laboratory hours. 1 credit. A study of some of the modern research methods of molecular biology. The student gains experience with the technique concomitant with discussions with faculty. The student writes a comprehensive review of the technique studied.

697 Research in Pathology. 1-15 credits. Research leading to M.S. or Ph.D. degree.



PART III—School of Dentistry

JAMES H. REVERE, JR., B.A., D.D.S.

Acting Dean

JAMES E. HARDIGAN, Ph.D.

Assistant Dean for Administrative Affairs

RICHARD R. RANNEY, D.D.S., M.S.

Assistant Dean for Research and Graduate Affairs

R. BRUCE RUTHERFORD, D.D.S., Ph.D.

Assistant Dean for Student Affairs

F. B. WIEBUSCH, B.B.A., D.D.S.

Assistant Dean for Continuing Education

JOSEPH K. WITTEMANN, Ph.D.

Director of Educational Evaluation, Planning,
and Research

The MCV/VCU School of Dentistry was created in 1893 when the University College of Medicine opened with a dental department as one of its original divisions. The Medical College of Virginia inaugurated a dental education program in 1897, and in 1913 the two schools were merged to form the MCV School of Dentistry.

The facilities of the School of Dentistry are housed in the Wood Memorial and Lyons Buildings, and contain clinical facilities, classrooms, student laboratories, group study rooms with individual study alcoves, media library, departmental offices, and closed circuit color television studios with receiver units in laboratories and classrooms.

The school provides opportunities for selected, qualified individuals to study dentistry under the most favorable conditions and in accordance with the standards

established by the Council on Dental Education of the American Dental Association. The requirements for admission have the approval of the Virginia State Board of Dental Examiners and are acceptable to dental licensure boards of all other states and the District of Columbia.

The degree of Doctor of Dental Surgery is awarded to graduates.

MISSION OF THE SCHOOL OF DENTISTRY¹

The primary mission of the School of Dentistry is the education of general practitioners of dentistry capable of meeting the present and future oral health care needs of the citizens of Virginia.

An integral part of the primary mission is the education of dental specialists and hygienists. Furthermore, the faculty accepts the responsibility for a prominent role in research, continuing education, and community service.

As a state-aided institution and the only school of dentistry in Virginia, policies relative to admissions, undergraduate and postgraduate dental education programs, and continuing education will take special cognizance of the educational needs of Virginia dentists and dental hygienists and the oral health needs of the citizens of Virginia.

The School of Dentistry will fulfill its mission by

¹ Approved by the Faculty Council of the School of Dentistry, October 21, 1981.

- Providing educational programs which will allow maximum correlation of basic and clinical sciences, clinical experience in all phases of dentistry necessary to provide comprehensive patient care, and flexibility to permit didactic and clinical experiences through elective courses and clinics.
- Undertaking an active program to recruit and retain the students best qualified to meet the oral health needs of Virginia's citizens.
- Offering curricula which will provide the students an opportunity to obtain the knowledge and clinical skills necessary for the practice of dentistry and dental hygiene and an appreciation for the humanistic and ethical aspects of dental practice.
- Providing an educational climate which fosters a spirit of inquiry and stimulates students to a lifelong commitment to learning.
- Participating in interdisciplinary education, research, and service programs, thus maximizing the utilization of the resources of a comprehensive university.
- Familiarizing students with the dental health care needs of all segments of Virginia's population, especially patients with special needs, and providing the opportunity for students to deliver dental care in non-conventional settings.
- Providing students an opportunity to participate in community service projects and demonstrating the responsibility to work to improve the overall quality of life in the community.
- Emphasizing in all educational programs, the early recognition and prevention of oral and paraoral diseases.
- Providing an environment conducive to continued professional growth and development of the faculty.
- Providing the opportunity for students to work with other health professionals and to understand how they interface with dentistry.
- Providing opportunities in hospital-based general dentistry and graduate studies in the basic sciences in such number and variety as indicated by the needs of the commonwealth and their contribution to the primary mission of the school.
- Providing the opportunity for dentists to

acquire the knowledge and skill in dentistry and pedagogy so that the number of dental educators might be increased and their quality enhanced.

- Encouraging and supporting research by faculty and students aimed at increasing our understanding of the etiology and prevention of oral diseases, as well as improved therapy.
- Recognizing as a component of a comprehensive health center the obligation to provide patient service and consultation.
- Promoting a mutually advantageous relationship with the dental practitioners of Virginia by sponsoring a continuing education program responsive to their needs.
- Encouraging active participation by faculty and students in affairs of dentistry in the commonwealth.
- Providing for an ongoing reappraisal of its mission in concert with the mission of the university and MCV campus and the needs of Virginia.

GOALS OF THE UNDERGRADUATE CURRICULUM IN DENTISTRY²

The goals of the undergraduate dental curriculum at the Medical College of Virginia of Virginia Commonwealth University reflect the primary mission of the School of Dentistry to educate general practitioners of dentistry capable of meeting the present and future health care needs of the citizens of the commonwealth in an atmosphere conducive to learning. Specifically the undergraduate curriculum in dentistry strives to prepare a practitioner who

1. Applies basic concepts derived from the study of biomedical, physical, and behavioral sciences to the practice of dentistry.
2. Applies acquired information and skills to the evaluation of a patient's health status, effectively renders a diagnosis, develops a detailed program of dental treatment, and subsequently evaluates the effectiveness of treatment rendered in meeting the needs of the patient.
3. Has acquired the cognitive, affective, and psychomotor skills necessary to provide for the comprehensive dental treatment of patients.
4. Has developed a philosophy of oral and paraoral disease prevention based on sound

² Approved by Faculty Council, January 6, 1982.

principles of modern dental care and is able to apply requisite preventive therapies.

5. Has been made aware of the role of a dentist in interdisciplinary health delivery systems.

6. Has acquired the requisite interpersonal, managerial, and technical skills to effectively and efficiently work with other dental personnel.

7. Has been made aware of health science literature and understands that this knowledge can be relevant as applied to patient care.

8. Applies ethical, moral, and legal principles of dental practice.

9. Evaluates the current sociopolitical issues which impact on the delivery of dental care.

10. Recognizes and appreciates the scope of the undergraduate curriculum and the need for continued education.

11. Has been acquainted with the business skills necessary to operate a dental practice.

ADMISSION REQUIREMENTS

A minimum of 90 semester hours (or equivalent) in an accredited college or university is required. This minimum must include the following: three semester hours of English; two semesters each, with laboratory, of biology, general chemistry, organic chemistry, and physics. Biology courses should emphasize zoology rather than botany. Courses in general microbiology, the behavioral sciences, and courses involving psychomotor skills are strongly recommended. Academic credits presented by an applicant must be acceptable for credit toward a degree in the institution in which the courses are taken. Only one of the required courses may be taken during the year application is made. However, accepted students must document completion of required courses and 90 semester credits before registration can occur.

Participation in the Dental Admission Test (DAT) of the American Dental Association is required. This test must be taken by October of the year preceding intended matriculation. Applicants are encouraged to take the examination more than one time. The best set of scores is used as the official set.

Selection Factors

The Medical College of Virginia of Virginia Commonwealth University is a state-aided university and gives admission preference to state residents. All applicants are evaluated by uniform criteria without regard to national origin, color, race, age, religion, or sex.

Students are selected by the Admissions Committee on the basis of excellence of predental education, DAT scores, recommendations, and results of personal interviews with members of the committee. The interview process is standardized and designed to determine motivation, knowledge of and interest in the dental profession, and to afford the applicant an opportunity to provide additional information pertaining to his/her application. Members of minority groups underrepresented in dentistry are encouraged to apply.

Application Procedures

The School of Dentistry participates in the American Association of Dental Schools Application Service (AADSAS). All applicants are required to submit credentials through this service. Application forms can be obtained from AADSAS, P.O. Box 4000, Iowa City, IO 52240, predental advisors in colleges and universities, and the Office of Student Affairs, School of Dentistry, Medical College of Virginia, Virginia Commonwealth University, Box 566, MCV Station, Richmond, VA 23298.

Application to the School of Dentistry can be made through AADSAS on or after June 1 and must be received by AADSAS not later than December 15 of the year preceding intended matriculation.

AADSAS compiles academic records and other pertinent information and forwards these with the application to the School of Dentistry. Qualified applicants are then requested to submit supplemental information, such as letters of recommendation, by March 1 of the year in which admission is desired. The application fee is \$35.

Applicants will be notified of decisions according to guidelines established by the American Association of Dental Schools. Within 30 days following notification of acceptance, the applicant is required to deposit

\$100 toward tuition for the first year. After March 1, the deposit must be received within two weeks following notification of acceptance. The deposit fee is refundable prior to March 1.

A letter of acceptance offers the candidate a position in the class entering for the session cited. Receipt by the Office of Admissions and Student Affairs of the \$100 refundable tuition deposit within the prescribed period reserves the position in the class. Failure to reserve a position results in that position being offered to another candidate.

The act of matriculation also implies a willingness on the part of the student to comply with university rules and regulations, to take an interest in maintaining the ideals of the institution, and to conduct himself/herself in a manner befitting a member of the dental profession.

SUMMER INSTITUTE

The Summer Institute is a five-day program designed to assist the participants in becoming more efficient learners. It also serves to introduce students to some of the academic and personal support services available on campus. This program is offered to first-year students during the week preceding the beginning of the fall term. Detailed information is automatically mailed to new students. Attendance is limited to 70 new students. The program is voluntary, and selection for it is on a first-come, first-served basis. More information is available upon request from the Office of the Assistant Dean for Student Affairs, School of Dentistry, Medical College of Virginia, Virginia Commonwealth University, Box 566, MCV Station, Richmond, VA 23298.

SCHOOL OF DENTISTRY— READMISSION FOLLOWING A HEALTH-RELATED WITHDRAWAL³

Health-related withdrawals will be granted, except in unusual circumstances, for the remaining portion of the academic year in which withdrawal is approved. In no event will withdrawal exceed one academic year.

A student in the School of Dentistry who

was granted a health-related withdrawal and fails to notify the dean by the March 1 preceding the academic year in which studies are to be resumed (declaring his/her intent to return to school), ceases to be a student in the School of Dentistry, forfeits the right to return without reapplication, and must reapply through appropriate procedures if readmittance is desired.

First-year students who forfeit must reapply for a freshman class using the AADSAS system and if admitted will be considered a first year student with associated rights and responsibilities. Forfeiting students who withdraw from second, third, or fourth year classes must apply in writing for admission with advanced standing according to established procedures.

Students who are readmitted will receive credit for only those courses which have been completed and a final grade rendered prior to withdrawal.

Retention of credit for clinical requirements earned prior to withdrawal will be at the discretion of the appropriate department chairman.

Students who are approved by the dean for non-health-related reasons or students who withdraw unofficially must apply for readmission with advanced standing.

ADMISSION WITH ADVANCED STANDING

The School of Dentistry will consider as applicants for admission with advanced standing only matriculants at other dental schools reviewed for accreditation by the American Dental Association. Matriculants or graduates of dental schools outside the United States and Canada are not eligible for admission with advanced standing. Inquiries may be addressed to the Office of the Assistant Dean for Student Affairs, School of Dentistry, Medical College of Virginia, Box 566, MCV Station, Richmond, VA 23298.

FINANCIAL ASSISTANCE

A brief description of financial aid based on demonstrated need is contained in Part I of this bulletin. Financial need-based aid programs available to dentistry students include Health Professions Student Loan, National Direct Student Loan, State Dental Practice Scholarship, Virginia Dental

³ This policy statement applies to the School of Dentistry and supplements the *University Policy on Health-Related Withdrawals*.

Association Student Loan Program, and institutional loans. Further information on the State Dental Practice Scholarship Program may be obtained from the Office of Admissions and Student Affairs of the School of Dentistry. Information on the others may be obtained from the MCV Financial Aid Office.

HONORS

Students in each class who achieve at least a 3.2 grade-point average for the previous year are selected for the Dean's List.

The School of Dentistry has a chapter of Omicron Kappa Upsilon, the national honorary dental society. Each year the society selects those students who, in addition to scholarship, have demonstrated exemplary traits of character and potential qualities of future professional growth and attainments.

A certain percentage of junior and senior students are selected each year to become members of Sigma Zeta and Alpha Sigma Chi, honorary scientific societies.

The Alpha Omega Scholarship Award is presented to the graduating student who has attained the highest scholastic rating for his four years of dental study.

At the end of each academic year, senior students are recognized for their outstanding achievements in various dental areas. Awards are presented at the annual Honors and Awards Convocation to which students, parents, and faculty are invited.

A. D. Williams Award. An annual stipend may be made, on the nomination of the fac-

culty, to a student in each class who demonstrates by virtue of high scholastic attainment and professional performance, unusual promise and ability. Character, motivation, intellectual curiosity, and realization of the opportunities for intellectual development will be considered in the award which is made at the end of the academic year.

CURRICULUM LEADING TO THE D.D.S. DEGREE⁴

The curriculum in the dental school is organized into a four-year program leading to the Doctor of Dental Surgery (D.D.S.) degree. The academic year begins in August and extends over a 40-week period to the end of May. The program emphasizes study in three broad areas: basic sciences, clinical sciences, and social sciences.

The basic sciences include in-depth study of anatomy, biochemistry, genetics, microbiology, pathology, pharmacology, and physiology.

The clinical sciences prepare the student for the actual practice of dentistry and expose him/her to the various specialties in dentistry.

The behavioral sciences cover such topics as dental health needs, the system of health care delivery, practice management, professional ethics, and behavioral factors.

Laboratory and clinical experiences are offered throughout the four years to develop within the student the skills vital to the practice of general dentistry.

⁴ In general, courses offered as part of the curriculum in dentistry are not available to other students in the university. Exceptions may be granted by the dean, School of Dentistry, to students enrolled in graduate degree programs upon written request of the chairman of the department in which the student is seeking a degree.

CURRICULUM⁵

		Clock Hours		
		Lecture	Laboratory	Clinic
<i>Freshman, First Semester</i>				
ANA 501	Gross Anatomy	71	114	
BIC 501	Biochemistry	64	18	
ANA 503	Neuroanatomy	18	3	
GEN 531	Dental Genetics	20		
RED 511	Dental Anatomy	29	54	

⁵ The curriculum for the school is undergoing revision. The courses listed represent the proposed program as of the printing of this bulletin.

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		Lecture	Clock Hours Laboratory	Clinic
RED 510	Dental Materials	11		
GED 510	Behavioral Sciences	15		
GED 511	Human Nutrition	12		
<i>Freshman, Second Semester</i>				
PIO 502	Physiology	70	45	
ANA 502	Dental Microscopic Anatomy	40	76	
DEN 512	Principles of Occlusion	20	55	
RED 512	Restorative Dentistry	11	42	
MIC 513	Microbiology	66	42	
<i>Sophomore, First Semester</i>				
ORT 621	Orthodontics	14	30	
PMC 609	Dental Pharmacology and Pain Control (continues in second semester)	33	2	
RED 621	Operative Dentistry	17	54	
PAT 601	General Pathology	45	50	
GED 621	Occlusion II	11	29	
REP 623	Preclinical Complete Denture Prosthodontics (continues in second semester)	16	47	
GED 620	Caries	26		
DEN 623	Clinical Diagnostics and Skill Development (continues in second semester)	39	14	
PED 622	Pediatric Dentistry II (continues in second semester)	9		
PER 621	Etiology and Epidemiology of Periodontal Diseases	17		
<i>Sophomore, Second Semester</i>				
ORT 622	Orthodontics	21		
PER 622	Diagnosis and Treatment Planning for Periodontal Therapy	12		
PED 622	Pediatric Dentistry II	18	10	9
END 625	Principles of Endodontics	13	28	
ORP 622	Oral Pathology	26	16	
REP 623	Preclinical Complete Denture Prosthodontics	9	36	
ORS 622	Oral Surgery I	14		
RED 622	Crown and Bridge Technic Course I	21	94	
PMC 609	Dental Pharmacology and Pain Control	33		
DEN 623	Clinical Diagnostics and Skill Development	32	35	30
<i>Junior Year</i>				
PMC 611	Pharmacology and Pain Control	28	4	
PRM 731	Physical Evaluation and Diagnosis	14		
REP 735	Clinical Removable Partial Denture Prosthodontics	27		
REP 733	Complete Denture Prosthodontics	30		
REP 731	Preclinical Removable Partial Dentures	32	41	
ORT 733	Orthodontic Therapy	14		
ORS 733	Oral Surgery II	26		
END 731	Endodontic Therapy	14		
ORP 732	Clinical Oral Pathology	11		
RED 731	Crown and Bridge Technic Course II	13	54	
RED 732	Restorative Dentistry	22		
PER 733	Periodontal Therapy	23		
PED 733	Pediatric Dentistry	26		
GED 742	Special Patients	12		

Senior Year

LEM 741	Dental Jurisprudence	8
GED 741	Practice Administration	20
GED 742	Dentistry for Special Patients	10
ORP 741	Oncology	8
DEN 742	Management of Pain in the Head and Neck	10

JUNIOR ROTATIONS⁶

ORP 737.01	Radiology Rotation	56
GED 749	DAU Clinical Rotation	60

(continues in D4 year)

OTHER ROTATIONS

Endodontics	12
Occlusion	3
Pedodontics	5

SENIOR ROTATIONS

ORP 747.01	Diagnosis Rotation	72
ORP 747.02	Oncology Rotation	8
GED 747	Senior Externship	120

OTHER ROTATIONS

Endodontics.	12
TMJ Clinic.	3
Pedodontics.	5
Certification in Advanced Cardiac Life Support Program	13
	14

CLINIC YEARS (D3, D4)⁷

GED 739	Preventive Services	39
END 749	Clinical Endodontics	60
ORS 749	Oral Surgery III	96
ORT 749	Clinical Orthodontics	30
PED 749	Clinical Pediatric Dentistry	210
PER 749	Clinical Periodontics	240
RED 749	Clinical Restorative Dentistry	460
REP 749.01	Clinical Complete Denture Prosthodontics	200
REP 749.03	Clinical Partial Denture Prosthodontics	175
DEN 792	Special Studies Program	Variable

SENIOR ELECTIVE CURRICULUM

Recognizing that individual students have different needs and goals, the School of Dentistry offers a didactic/clinically-oriented senior year. Elective courses have been developed so that students who have an interest in further developing competency in a particular area may do so without adherence to a rigid curriculum. In addition, this program allows students, who have demonstrated or feel a lack of competence in an area, to enhance their educational experience. This program also allows those who have not defined their goals to be exposed to an assortment of courses which may lead to

career options they have not yet encountered.

Continuation of clinical assignments and patient care is required during this experience.

Each semester a new elective catalog is published containing courses offered by the various departments and divisions of the School of Dentistry as well as other schools of the university.

Special Studies Program (DEN 792)

The Special Studies Program is an individualized program for qualified fourth year students which permits the student to focus his/her time and energy in a defined area of study, service, and/or research in the biomedical and clinical sciences; and/or delivery of patient care within and outside the school.

⁶ These rotations are included in clinical courses during D3-D4 years.

⁷ Clock hours represent maximum time available.

ACADEMIC PERFORMANCE GUIDELINES*

The faculty of the MCV/VCU School of Dentistry has the responsibility for evaluating the student's academic performance. It is incumbent on the course directors or their designees to specify, at the time that courses first convene, the criteria to be used in student assessment and the standards by which they will be judged.

Grades—As a result of evaluation by the faculty, each student may obtain those grades listed in the *Medical College of Virginia Bulletin*. Special grade considerations are as follows:

I = Incomplete: Course requirements have not been completed. This grade is reserved for those situations in which the student has been unable to complete the course requirements for justified reasons. Subsequently, the student must complete the course(s) in which he/she is deficient in order to earn a final grade. A student may be required to retake an examination or complete additional clinical material at the discretion of course director and/or chairman of the department. The time allowed for the removal of the "I" is at the discretion of the course director and/or chairman of the department with the approval of the Academic Performance Committee but in no instance may this extend beyond the second semester following the semester in which the grade of "I" was incurred.

When a deadline has been established to remove a grade of "Incomplete," the student assumes the responsibility for completing the course requirements. When the student has not met the specified deadline to remove the "I," a final grade of "F" will be given and grade changes may be accomplished only through the grade appeals procedure.

CO = Continuing: In addition, progress grades will be issued for continuing didactic and clinical courses at the end of each semester. Specific progress information will be recorded only in the School of Dentistry.

On the basis of the compiled grade record for each student, the Academic Performance Committee will recommend to the dean of the School of Dentistry graduation, promo-

tion, probation, repetition of a year, or dismissal. Other factors considered by the Academic Performance Committee in making these recommendations are covered in the following sections.

The student has the right to appeal any grade through the university grade appeal process. Decisions of the Academic Performance Committee may be appealed through the appeal process of the School of Dentistry.

Graduation—Upon successful completion of the four-year dental curriculum or dental hygiene curriculum, students will be considered for graduation if they have a minimal grade-point average of 2.0 for the senior year, a minimal cumulative grade-point average of 2.0, and have successfully completed all course requirements. The disposition of all cases in which a student has *failed to achieve a 2.0 grade-point average* will be determined on an individual basis.

However, students who have a 2.0 cumulative average or higher and have earned one or more "D" grades in clinical courses during their senior year will be subject to further review and may not be recommended for graduation. Information related to status of patient(s) under the student's care will be considered in the deliberations.

Promotion—Students who have achieved a grade-point average of 2.0 or higher and who have not failed a course in a given academic year will be *considered* for unconditional promotion. In addition to achieving a grade-point average of 2.0, junior students must satisfactorily achieve minimum clinical requirements in order to be promoted to the senior year. Failure to achieve D-3 minimum requirements will result in a recommendation of repetition of the year or dismissal. When a student has one or more incomplete grades, the student may be promoted conditionally. The student will be promoted upon satisfactorily removing the *incomplete* grades according to the Academic Performance Committee's specifications. The grade-point average will be recomputed.

Any student with *one failing grade* may be recommended for promotion provided that the failing grade can be satisfactorily removed before the end of the next academic year or in the specified time frame and the student has met all provisions as recommended

* Approved October 14, 1982.

by the course director(s) and the Academic Performance Committee. Failure to comply with all provisions as recommended will subject the student to (a) repetition of the year; (b) dismissal; or (c) other action as recommended by the Academic Performance Committee.

Upon satisfactory completion of the course in which a grade of "F" is recorded, the new grade will be added and recorded on the student's permanent record and entered into the compilation of the grade-point average. Both grades will be computed in determining the student's grade-point average.

Upon review by the Academic Performance Committee, a student with *two or more failures* in an academic year shall be subject to (a) repetition of the year; (b) dismissal; or (c) other action as recommended by the Academic Performance Committee.

All students who fail to achieve a 2.0 grade-point average in any given semester are automatically placed on academic probation.

If the cumulative grade-point average is below a 2.0, the Academic Performance Committee may recommend conditional promotion, repetition of the year, dismissal from the institution, or other action.

A student who has compiled a probationary record for *two successive semesters* will be subject to repetition, dismissal, or other action as recommended by the Academic Performance Committee.

Services to the Public and Quality Care. The dental student's primary obligation of service to the public shall include the delivery of quality care, competently and timely, within the bounds of the clinical circumstance presented by the patient. Quality of care shall be a primary consideration of the dental student.

ADVANCED DENTAL EDUCATION PROGRAMS

The School of Dentistry provides advanced dental education programs in the dental specialty areas of endodontics, oral pathology, oral and maxillofacial surgery, orthodontics, pedodontics, periodontics, and fixed prosthodontics. Satisfactory completion of the program leads to the award of

a certificate of training, certifying eligibility for examination by the appropriate specialty board. All programs are accredited by the Commission on Accreditation of Dental and Dental Auxiliary Educational Programs of the American Dental Association. Also, a program is offered for additional training of prosthodontists in maxillofacial prosthetics. Those enrolled are full-time resident trainees, considered to be equivalent full-time students. Under special circumstances, trainees may be accepted into some programs on a part-time basis.

Applications for admission should be directed to the director of the desired program. Candidates for admission to advanced education programs involving clinical care of patients must be eligible for dental licensure in Virginia.

Endodontics

Program Director: R. Neil Dodds, D.D.S.

The advanced education program in endodontics is designed to educate qualified individuals to pursue careers as teachers, researchers in the biological sciences, and practicing specialists of endodontics.

The basic 22-month certificate program is composed of two interrelated phases. The first consists of lecture courses which provide the student with a firm biological basis for patient care. The second phase consists of lectures, seminars, and clinical training which is designed to produce clinical proficiency. Research experience is gained through the completion of an individual research project. The entire program conforms to guidelines established by the American Board of Endodontics and the Education Committee of the American Association of Endodontics, and the Commission on Accreditation (A.D.A.).

Since the major emphasis of the program is on teaching and research, students have the option, within an expanded time frame, to seek advanced degrees (M.S. or Ph.D.). The curriculum is designed on an individual basis by the basic sciences advisor and the director of postgraduate endodontics.

Oral Pathology

Program Director: Richard P. Elzay, D.D.S.

The philosophy of this program is to train

interested, qualified individuals to become competent practicing oral pathologists, researchers, and/or teachers. The program is formal but flexibility does permit trainees the opportunity to pursue areas of interest in their didactic and research efforts. Training may be divided into two interlocking phases. The first phase is a residency program and adheres to the accreditation guidelines of the Commission on Accreditation (A.D.A.). This phase of the program is of 24 months duration and prepares the individual for board eligibility.

Phase two, an optional graduate program, is for those individuals who wish to augment their residency training by receiving an M.S. or Ph.D. degree through one of the basic science departments in conjunction with their residency training in pathology. Applicants may be eligible, if accepted, for an annual stipend and/or clinical fellowship on a competitive basis.

Oral and Maxillofacial Surgery

Program Director: John M. Alexander, D.D.S.

The oral and maxillofacial surgery program is designed to include three interns, six assistant residents, and three residents. The program has been approved since its inception by the Commission on Accreditation of the American Dental Association and by the Committee on Residency Education and Training of the American Association of Oral and Maxillofacial Surgeons. Those who complete the four years of training satisfactorily fulfill the prerequisites of the American Board of Oral and Maxillofacial Surgery and are eligible for examination by that board.

Didactic material is given over a four-year period and includes courses in oral pathology, anatomy, and physical diagnosis. Clinical rotations on the following services are used to supplement the trainee's experience: oral pathology, anesthesia, medicine, surgical oncology, neurosurgery, cardiology, plastic surgery, emergency room, and private service. Seminars in allied fields such as pharmacology, anesthesiology, physiology, and microbiology, also supplement the didactic and clinical rotation. There is a constant correlation of clinical experience during the four-year training with

ever increasing responsibilities as time and abilities dictate.

Through the multiple clinical and didactic facilities of the MCV/VCU medical center complex and the McGuire Veterans Administration Medical Center, there is ample material for education in the latest oral and maxillofacial surgical techniques.

The oral and maxillofacial surgery service is responsible for diagnosis and management of diseases related to the oral cavity and its associated structures. Trainees are involved in all aspects of treatment including exodontia, simple and complicated; anesthesia; oral and maxillofacial trauma, soft and hard tissue; preprosthetic surgery; orthognathic surgery, oral and paraoral pathology, oral and maxillofacial reconstruction, and temporomandibular joint surgery.

The trainee is accepted for the full four years since a combined didactic and clinical experience is the most valuable and practical way of providing complete exposure to the field of oral and maxillofacial surgery.

Orthodontics

Program Director: James E. McIver, D.D.S.

This 24-month advanced education program begins each July and is completed in June of the second year. The curriculum includes courses from the basic science departments, from the advanced programs of the dental school, as well as from the Department of Orthodontics. Departmental and conjoint seminars provide additional experiences to enhance clinical knowledge and judgment. The primary emphasis of this certificate program is on clinical competence and includes the coordination of treatment with various medical and dental specialties. The completion of a research project is a requirement of the program.

A graduate program, which requires approximately 33 months to complete, is also available. In addition to a certificate in orthodontics, this program leads to a Master of Science degree in a basic science. The curriculum is designed for each individual by the Department of Orthodontics and the basic science department concerned.

Pedodontics

Program Director: Arthur P. Mourino, D.D.S., M.S.D.

The advanced dental education program in pedodontics is a 24-month program designed to meet the guidelines of the American Academy of Pedodontics and the requirements of the Commission on Accreditation of the American Dental Association. It is a combined university- and hospital-based postgraduate program leading to a certificate of advanced training in pedodontics. In addition, a combined program leading to an M.S. or Ph.D. degree with a clinical specialty in pedodontics is available for interested and qualified individuals.

Emphasis is placed on a diversified educational experience. Teaching and research opportunities supplement the clinical, hospital, and didactic components of the program. The course of study includes clinical experience in the treatment of handicapped as well as normal children, pediatric and hospital rotations, and comprehensive dental care with the aid of general anesthesia. Seminars and formal courses are held in pedodontic and orthodontic diagnosis and treatment planning, growth and development, cephalometric analysis, oral pathology, principles of pediatrics, pharmacology, anesthesiology, head and neck anatomy, learning disorders, basic science, and clinical core courses. Elective courses are available within the university and the School of Dentistry.

Periodontics

Program Director: Kent G. Palcanis, D.D.S., M.S.D.

The advanced education program in periodontics consists of a 24-month curriculum leading to a certificate of training in periodontics. The curriculum includes courses in the basic sciences plus seminars, lectures, and clinics. All provide opportunities for concentrated learning and experience in the clinical specialty of periodontics as well as interaction with interrelated areas of general dentistry and other clinical specialties. The philosophy of the program requires that the student develop capacity for judgment and adaptability from knowledge of basic science and reliance on evaluation of published reports.

For trainees interested in pursuing academic careers, the program may be expanded to include research experience or

combined with an M.S. or Ph.D. degree in the School of Basic Sciences. The curriculum for the combined residency/degree program is individualized, building upon the requirements for the residency in the basic science department of interest. Combined programs require a minimum of 36 months for completion of requirements for the M.S. degree and a minimum of 48 months for the Ph.D. degree.

Fixed Prosthodontics

Program Director: Florian J. Knap, D.D.S., M.S.

The advanced education program in fixed prosthodontics is designed to educate qualified students to pursue careers in teaching and specialized practice.

The basic two-year full-time course has two divisions. A basic science core curriculum provides advanced training in the biological sciences. The fixed prosthodontics division consists of seminars, lectures, and literature review. In the clinical program, the student does reconstructive dentistry with two types of fully adjustable articulators as well as with generated path procedures. Also included are full dentures, splint therapy in masticatory dysfunction, and adjustment of the natural dentition. Each student does at least one precision-attachment partial denture. The graduate student does nearly all his own laboratory procedures.

Maxillofacial Prosthetics

Program Director: Barry Shipman, D.M.D.

The advanced program in maxillofacial prosthetics spans 12 months. Prior completion of an accredited university or hospital program in prosthodontics is a prerequisite to admission. The training program is a combined university- and hospital-based program leading to certification of training in maxillofacial prosthetics.

The curriculum includes both clinical and didactic education in the comprehensive care of patients with congenital, acquired, and developmental maxillofacial deformities. Lectures and seminars are directed towards diagnosis, treatment planning, and comprehensive medical and dental maxillofacial rehabilitation. Clinical services are performed in the VCU/MCV Hospitals and the Mc-

Guire Veterans Administration Medical Center.

Primary emphasis of the program is directed towards patient care and the development of clinical and didactic skills in the treatment of the maxillofacial patient. Students will spend approximately 70 percent of their time in direct patient care. Rotations in oral and maxillofacial surgery, surgical oncology, and radiation therapy are integrated into the overall curriculum to broaden the understanding for the need and direction of maxillofacial prosthetic rehabilitation.

COMBINED D.D.S. AND M.S. OR PH.D. PROGRAMS

The dental curriculum provides an opportunity for interested dental students to enter a combined D.D.S./M.S. or Ph.D. program.

Individualized curricula are developed for such students, with the approval of the students' advisors in the basic science department of study, the dean of the School of Basic Sciences, and the assistant dean for research and graduate affairs of the School of Dentistry. Ordinarily, the combined program requires more than four years to complete requirements for both degrees. For further details see the section on School of Basic Sciences.

Dental Hygiene Program

The Dental Hygiene Program, instituted in 1969, offers courses in the School of Dentistry leading to a Bachelor of Science degree in dental hygiene. The program requires two years of liberal arts study, with a minimum of 60 semester hours, followed by two years of study in dental hygiene. The Dental Hygiene Program is accredited by the Commission on Accreditation of the American Dental Association. Upon successful completion of the program, graduates will be eligible for national, regional, and state board licensure examinations.

PHILOSOPHY AND GENERAL EDUCATIONAL GOALS

The Dental Hygiene Program believes that the modern practicing hygienist needs a broad range of skills to function effectively.

Training in particular clinical-technical skills, while essential, will not be sufficient to meet increasing social demands for comprehensive oral health care at all societal levels. The program sees the baccalaureate degree dental hygienist as a key agent, not only in helping the dental profession respond to changing demands, but also in helping to facilitate change itself. Therefore, the baccalaureate degree program in dental hygiene has the following overall goals:

- Perform traditional dental hygiene functions.

- Employ decision-making skills in providing clinical service in health care and educational programs.

- Function under supervision in an extended role in the provision of independent units of service.

- Assume a leadership role within political, social, educational, and professional settings to improve the health of all members of society.

- Design and implement health programs utilizing principles and theories of learning, health care organizations, behavioral science, and communication skills.

- Apply research design and statistics in critiquing professional and scientific literature.

- Apply research methodology to design and to evaluate the effectiveness of health care and educational programs.

- Administer dental service programs in comprehensive health care units and community settings.

- Function as a dental health consultant.

- Prepare for graduate and advanced professional programs.

HONORS AND AWARDS

Sigma Phi Alpha is the National Dental Hygiene Honor Society. Elected to membership are senior dental hygiene students who rank highest in scholarship and character and exhibit potential qualities for future growth and attainment as recommended by faculty members. Membership is limited to ten percent of the graduating class and is selected from the upper 20 percent of the class. If ten percent of the class is fewer than two, a maximum of two seniors may be elected.

Community Dental Hygiene Award. This

award, presented annually to a graduating senior dental hygiene student, is based not only on the student's ability to recognize and understand the oral health needs of a community, but also on the demonstrated ability to develop and implement a program to meet those needs.

A certificate is given and the recipient's name is engraved on a plaque which hangs in the School of Dentistry.

Virginia Dental Hygienists' Association Award. An annual award is made to one graduating senior and is based on the student's scholastic ability, clinical proficiency, and professional contributions. A one-year membership in the American Dental Hygienists' Association and a certificate are presented to the selected student and the individual's name is engraved on the school plaque.

A. D. Williams Award. An annual stipend may be made, on the nomination of the faculty, to a student in each class who demonstrates by virtue of high scholastic attainment and professional performance unusual promise and ability. Character, motivation, intellectual curiosity, and realization of the opportunities for intellectual development will be considered in the award which is made at the end of the academic year.

FINANCIAL AID

Scholarships are available through the American Dental Hygienists' Association and the Virginia State Department of Health. Additional aid is available through loan funds of the Virginia Dental Hygienists' Association, the Virginia Dental Association, and the Financial Aid Office of MCV/VCU. Full information on financial aid is available upon request from the Financial Aid Office, Medical College of Virginia, Virginia Commonwealth University, Box 244, MCV Station, Richmond, VA 23298.

Dental hygiene students qualify for the National Defense Student Loan Program and the Veterans Administration Benefits.

CURRICULUM—DENTAL HYGIENE

Junior Year, First Semester

		Lecture	Clock Hours Laboratory	Clinical	Credits
ANA 507	Head and Neck Anatomy	2	3		3
MIC 365	Infection and Immunity	2	2		3

ADMISSION REQUIREMENTS

Two years of liberal arts study with a minimum of 60 semester hours of transferable quality academic courses are required.

A. Courses

1. Specific
 - a. English-1 year
 - b. Biology
 - c. Chemistry—1 year
 - d. Anatomy and Physiology
 - e. Introductory Sociology
 - f. Introductory Psychology
 - g. Introductory Speech
 - h. Basic statistics
 2. Approved electives fulfilling the distribution requirements of the liberal arts college or university currently attending.
- B. At least a "C" average must be earned for all work undertaken.
- C. A personal interview by a previously arranged appointment may be requested prior to admission.

For further details regarding the Dental Hygiene Program contact the Director of Dental Hygiene, Medical College of Virginia, Virginia Commonwealth University, Box 566, MCV Station, Richmond, VA 23298, (804) 786-9096.

For application information contact University Enrollment Services, Medical College of Virginia, Virginia Commonwealth University, Box 163, MCV Station, Richmond, VA 23298, (804) 786-0488.

GRADUATION REQUIREMENTS

Graduation requirements are given in the "Academic Performance Guidelines" for the School of Dentistry.

CURRICULUM

The Dental Hygiene Program includes study of the basic, dental, and clinical sciences through lecture, laboratory, clinical, and community experiences.

62 School of Dentistry

NUR 341	Human Nutrition	2		2
ORP 301	General Pathology	1		1
RED 311	Dental Anatomy	2	3	3
DEH 301	Dental Hygiene I	2	6	4
				<hr/> 16

Junior Year, Second Semester

ANA 302	General and Oral Microanatomy and Embryology	3		3
ORP 524	Oral Pathology	2		2
PER 410	Periodontics5	(continuing course fall 1984)	
RED 302	Dental Materials	1	3	2
DEH 302	Dental Hygiene II	2		4
DEH 312	Community Dental Health I	3		3
DEH 322	Dental Radiology	1	3	
				<hr/> 16

Senior Year, First Semester

PMC 441	Pharmacology and Pain Control	5		5
PER 410	Periodontics	1.5	(continued from spring 1984)	2
DEH 401	Dental Hygiene III	1	3	5
DEH 411	Community Dental Health II	3		3
	Electives			2-3
				<hr/> 17-18

Senior Year, Second Semester

DEH 402	Dental Hygiene IV	1		24	7
DEH 412	Community Dental Health III	1	9		4
DEH 422	Dental Hygiene Seminar I	2			2
DEH 442	Dental Hygiene Seminar III	1		4	2
				<hr/>	15

DIVISION OF CONTINUING EDUCATION

F.B. Wiebusch, D.D.S.

Assistant Dean for Continuing Education

For every professional person who serves the health sciences, education must be a life-time process.

Graduation from dental school is the beginning of a continuous educational experience for the serious, conscientious student of dentistry. Regardless of how well prepared a professional person may be at the time he completes his education, the adequate knowledge of yesterday is often insufficient information for today and tomorrow. With the rapid advancements made in dental concepts and technics, the professional person must constantly seek new knowledge if he is to improve the health care he gives his patients.

Although the majority of continuing education courses are presented at the School of Dentistry, some offerings are given in other locations. The courses, which vary in length from one day to five days, are scheduled all year and consist of a variety of instructional methods—from didactic and television presentations to the individual's participation in clinical procedures.

The instructional staff for the endeavors is comprised of teachers from the MCV/VCU School of Dentistry, guest lecturers from other dental schools, and members of the dental profession and related professions from the United States and other countries.

DEPARTMENTS AND PROGRAMS OF INSTRUCTION

Some courses in the School of Dentistry are taught in blocks of time which do not lend themselves to identification by lecture or laboratory hours per week. In lieu of this the hours in those courses are identified by total hours taught. The curriculum is now being revised. Course numbers and titles listed may or may not be applicable for 1983-84.

Conjoint Courses: (DEN)

DEN 512 Principles of Occlusion

DEN 623 Clinical Diagnostics and Skill Development

DEN 742 Management of Pain in the Head and Neck

DEN 792 Special Studies Program

Program in Dental Hygiene (DEH)

Associate Professor: Dinius (Chairman)

Assistant Professor: Neel

Clinical Instructors: Bays; Bowen; Bressant; Brooks; Carmichael; Cosby; DiStanislao; Fields, C.; Hall; Hawk; Hendrix; Kray; Meador; Pearson; Stevens; Vitsky; Wilson

Courses in Dental Hygiene (DEH)

DEH 301 Dental Hygiene I
DEH 302 Dental Hygiene II
DEH 312 Community Dental Health I
DEH 322 Dental Radiology
DEH 401 Dental Hygiene III
DEH 402 Dental Hygiene IV
DEH 411 Community Dental Health II
DEH 412 Community Dental Health III
DEH 422 Dental Hygiene Seminar I
DEH 442 Dental Hygiene Seminar II

Department of Endodontics

Associate Professor: England (Chairman)
Associate Clinical Professor: Kemp
Assistant Professors: Dodds; Holcomb; Wade
Assistant Clinical Professors: Calhoun; Eleazer; Goodman, A.; Haber; Hill; Johnson, B.; Lance; O'Keefe; Lowe; Peron; Sainsbury; Stavisky
Clinical Instructors: Harris, B.; Radcliffe; Umnstott; Wood, R.; Wozniak

Courses in Endodontics (END)

END 625 Principles of Endodontics
END 731 Endodontic Therapy
END 749 Clinical Endodontics

Department of General Dentistry

Associate Professors: Butler (Chairman); Abbott; Bush; Fishman
Associate Clinical Professor: Price, M.R.
Assistant Professors: Leary; VanOstenberg; Wadsworth; Zero
Assistant Clinical Professors: Perkinson, Smith
Instructor: Hagan
Clinical Instructors: Adams; Austin; Bernhardt; Cochran; Colosanto; Cox; Dent; Dusek; Evens; Flanders; Freedman; Gaskins; Glasser; Griggs; Guarnieri; Hicks; Hutcheson; Jeffrey; Kelley; Knaysi; Lambert; Leinbach; Lombardo; Martoff; McGrane; Milonas; Rhodes; Riggs; Sanford; Schroeder; Snyder; Talton; Vogel; Weiss; Witcher; Wood

Courses in General Dentistry (GED)

GED 510 Behavioral Sciences
GED 511 Human Nutrition
GED 620 Cariology
GED 621 Occlusion II
GED 741 Practice Administration
GED 742 Special Patients
GED 747 Senior Externship
GED 749 Dental Auxiliary Utilization
GED 739 Preventive Services

Department of Oral Pathology

Professors: Elzay (Chairman); Salley
Clinical Professor: Perry
Associate Professor: Abbey
Assistant Professors: Burns; Kaugars; Page; Svirsky
Assistant Clinical Professor: Carr
Clinical Instructors: Jones; Redwine

Courses in Oral Pathology (ORP)

ORP 524 Oral Pathology (Dental Hygiene)
ORP 622 Oral Pathology
ORP 732 Clinical Oral Pathology
ORP 737 Radiology Rotation
ORP 741 Oncology
ORP 747.01 Diagnosis Rotation
ORP 747.02 Oncology Rotation
ORP 301 General Pathology (Dental Hygiene)

Department of Oral and Maxillofacial Surgery

Professor: Ackell
Clinical Professors: Peters; Smith
Associate Professors: Alexander (Acting Chairman); Campbell; Mercuri; Shipman (maxillofacial prosthodontist)
Assistant Professor: Giglio
Assistant Clinical Professors: Bissell; Clough; Cuttino; Green; Hoard; Isbell; Malbon; O'Neil; Priest; Schwartz; Tankersley

Courses in Oral Surgery (ORS)

ORS 622 Oral Surgery I
ORS 733 Oral Surgery II
ORS 749 Oral Surgery III

Department of Orthodontics

Professor: McIver (Chairman)
Associate Clinical Professor: Hamer
Assistant Professors: Peterson; Ross
Assistant Clinical Professors: Anderson; Bragassa; Comer; DuVall; Gills; Kaplan; LeHew; Monacell; Riley; Waitkus

Courses in Orthodontics (ORT)

ORT 621 Orthodontics
ORT 622 Orthodontics
ORT 733 Orthodontic Therapy
ORT 749 Clinical Orthodontics

Department of Pedodontics

Associate Professors: Farrington (Chairman); Mourino; Sorenson
Assistant Professors: Brownsten; Doyle; Rubenstein
Assistant Clinical Professors: Adams; Avent; Bennett; Chapman; Golden; Keeton; Waitkus; Wood
Clinical Instructors: Addington; Barrett; Boggs;

Callery; Kendig; Lazar; Masters; Scanlan; Sexton; Wilkinson

Courses in Pediatric Dentistry (PED)

PED 622 Pediatric Dentistry II

PED 733 Pediatric Dentistry

PED 749 Clinical Pediatric Dentistry

Department of Periodontics (PER)

Professors: Ranney; Wiebush

Clinical Professors: Maynard; Ormes; Wilson

Associate Professors: Palcanis (Chairman); Rutherford; Schenkein

Associate Clinical Professor: Sweeney

Assistant Professors: Burmeister; Cavallaro; Ries

Assistant Clinical Professors: Arnold; Bird; Doswell; Green; Singdahlsen; Ziegler

Clinical Instructors: Eakin; Eddy; Kuniyara; Singer; Skavdahl

Courses in Periodontics (PER)

PER 410 Periodontics for the Dental Hygienist

PER 621 Periodontal Anatomy and the Pathology and Etiology of Periodontal Diseases

PER 622 Diagnosis and Treatment Planning for Periodontal Therapy

PER 733 Periodontal Therapy

PER 749 Clinical Periodontics

Department of Removable Prosthodontics

Professor: Bell (Chairman)

Associate Professors: McCasland; Ward

Associate Clinical Professor: Finnegan

Assistant Professors: Crabtree; Guilford; Kazanoglu; Revere; Tsao

Assistant Clinical Professors: Kolb; Rose

Clinical Instructor: Kessler

Courses in Removable Prosthodontics (REP)

REP 623 Preclinical Complete Denture Prosthodontics

REP 731 Preclinical Removable Partial Dentures

REP 733 Complete Denture Prosthodontics

REP 735 Clinical Removable Partial Denture Prosthodontics

REP 749.01 Clinical Complete Denture Prosthodontics

REP 749.02 Clinical Partial Denture Prosthodontics

Department of Restorative Dentistry

Professors: Knap (Chairman); Crockett

Clinical Professor: Fitzhugh

Associate Professors: Eshleman; Harrington; Jones; Moon; Shepard; Wittrock

Associate Clinical Professors: Beall; Hudson; Ortiz

Assistant Professors: Barnes; Baum; Beck; Button; Douglas; Janus

Assistant Clinical Professors: Covington; Huband; Hubbard; Jenkins; Lee; Rogers; Tregaskes

Clinical Instructors: Bernard; Belt; Bischoff; Counts; Crist; Dameron; Hudgins; Johnson; King; McMunn; Russo; Stanley; Wiley; Winneberger

Courses in Restorative Dentistry (RED)

RED 302 Dental Materials (Dental Hygiene)

RED 311 Dental Anatomy (Dental Hygiene)

RED 511 Dental Anatomy

RED 510 Dental Materials

RED 512 Restorative Dentistry

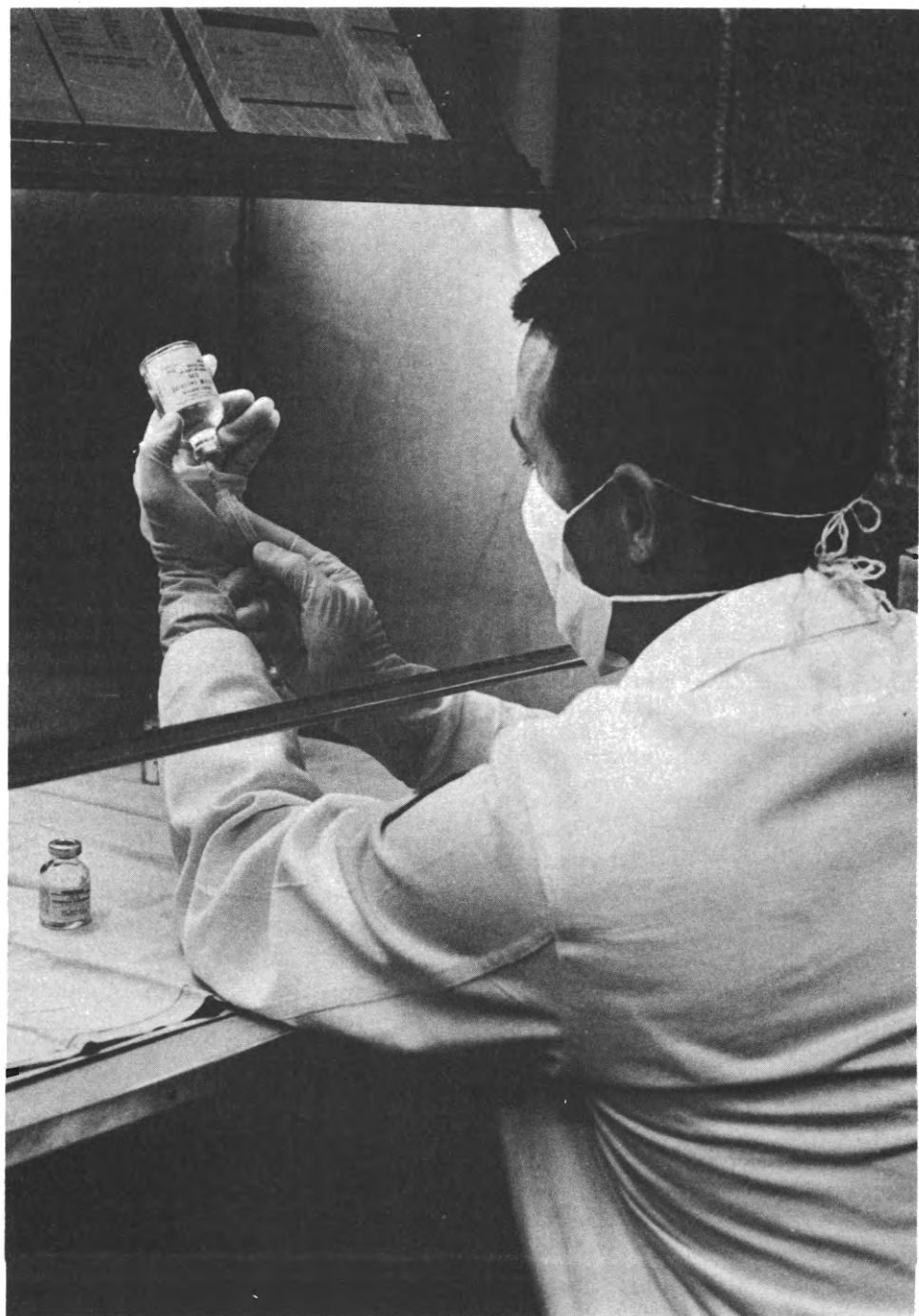
RED 621 Operative Dentistry

RED 622 Crown and Bridge Technic Course I

RED 731 Crown and Bridge Technic Course II

RED 732 Restorative Dentistry

RED 749 Clinical Restorative Dentistry



PART IV—School of Pharmacy

JOHN S. RUGGIERO, Ph.D.

Dean

GRAHAM C. WINDRIDGE, Ph.D.

Assistant Dean

C. EUGENE WHITE, B.S., J.D.

Assistant Dean of Students

WERNER LOWENTHAL, Ph.D.

Director of Continuing Education

The School of Pharmacy of the Medical College of Virginia of Virginia Commonwealth University, was officially established in 1898; the University College of Medicine had a school of pharmacy when it opened in 1893. A two-year curriculum gave way to a three-year program in 1925, and in 1932 the school required four years of college work for which a B.S. degree was awarded. The curriculum for the Bachelor of Science in Pharmacy degree was extended to five years in 1960. The School of Pharmacy enrolls students in a three-year professional curriculum following completion of two years of pre-professional studies taken elsewhere.

In 1975, the School of Pharmacy received authorization to offer advanced professional education leading to the Doctor of Pharmacy degree.

The authority to award graduate degrees in the pharmaceutical sciences was granted by the Graduate Council in 1952. Departments in the school direct work leading to the M.S. and Ph.D. degrees in pharmaceutical chemistry, pharmaceuticals, and pharmacy administration.

Since 1971, all pharmacy students have participated in a clerkship program. During

their last semester, students in the baccalaureate program serve a four-week clerkship within the Medical College of Virginia Hospitals, working directly with patients and their drug therapy programs; four weeks each in a community pharmacy and a hospital pharmacy under the training and guidance of selected preceptors; and four weeks in elective programs. Students in the Doctor of Pharmacy program participate in more extensive clerkships and in research projects to investigate methods for improving pharmaceutical services.

PHILOSOPHY

In developing the curriculum of the School of Pharmacy, the faculty recognizes that an educated man or woman should be prepared to assume a responsible and rewarding role in society. Accordingly, the educational program is designed to provide a sound, scientific, and professional background for both those who will enter the practice of pharmacy directly and those who wish to continue graduate education in the pharmaceutical sciences. It includes as much of the arts and humanities as possible in order to provide the student with a broad educational base which will permit participation in community life, not only as a professional, but also as an informed, concerned citizen. Such courses enrich the student's life by stimulating a greater appreciation of cultural values and sensitivity to the problems of our society.

Additionally, the program endeavors to orient the student to the problems and needs of urban life in our nation and in Virginia in particular.

OBJECTIVES

The primary objective of the School of Pharmacy is to educate men and women who seek to enter health service work in one of the several disciplines of pharmaceutical practice.

The School of Pharmacy seeks to provide an environment in which sound teaching and learning are promoted and excellence in achievement in the classroom, laboratory, and clinical setting is stressed. The school subscribes to the same ideals in its clerkship program which contributes learning experiences at selected community and hospital practice sites.

The School of Pharmacy is cognizant of its responsibility to add new knowledge in the pharmaceutical and related sciences and endeavors to do so by promoting and encouraging research and graduate education in these sciences.

Throughout the years of professional education, the school aims to instill in its students a dedication to professional ethics and ideals of professional services.

The School of Pharmacy recognizes its responsibility to teach its students the value of continuing education and to offer such programs for the benefit of practicing pharmacists.

To attain its objective, the School of Pharmacy strives to

- A. Provide the necessary environment for the student to acquire a fundamental knowledge and understanding of the pharmaceutical and basic medical sciences and the essential skills related to the practice of pharmacy.
- B. Develop in the student attitudes of professional responsibility and concern toward the community, patients, and colleagues in other health professions; and
- C. Kindle in the students a desire for constant professional improvement through self-education and participation in formalized programs of continuing education.

CAREER OPPORTUNITIES

Graduation from the School of Pharmacy affords the opportunity to pursue one of several career paths. The most familiar career is that of community pharmacist. In this setting, the pharmacist may be self-employed, or may be an employee of an organization which may range in size from a single pharmacy to a national chain.

In some cases, pharmacies specialize only in prescription and other health-related needs. About eight out of every ten pharmacists practicing in America serve in some capacity in community pharmacy.

One of the most rapidly growing aspects of pharmaceutical practice is institutional or hospital pharmacy. Almost all major hospitals have one or more full-time pharmacists. With increasing emphasis on institutional medicine, the demands for pharmacists in this area of practice have grown tremendously in the past few years.

The pharmaceutical industry employs pharmacists in several areas including manufacturing, quality control, research, and sales. Pharmacists are also engaged as medical service representatives who call on physicians. Opportunities are also available in various government services, including the Public Health Service and Veterans Administration, as well as in government-operated laboratories.

In most cases, those who aspire to engage in independent research, or to teach, seek graduate degrees in specialty fields related to pharmacy.

FACILITIES

The principal departments of the School of Pharmacy are in McGuire Hall and McGuire Hall Annex, located at Twelfth and Clay Streets. McGuire Hall was built in 1912 by the University College of Medicine and the annex was built in two phases; the first completed in 1955 and the second in 1958.

Classes for students in pharmacy are also conducted in Sanger Hall, located between Eleventh and Twelfth Streets on East Marshall Street. This building houses several basic science departments and the administrative offices for the MCV Campus of Virginia Commonwealth University. Students receive clinical experience in the MCV

Hospitals and Clinics. Other facilities available for teaching include area hospitals and pharmacies. The major library holdings are in the Tompkins-McCaw Library at Twelfth and Clay Streets.

In the spring of 1984, the School of Pharmacy will occupy a new building currently under construction.

ACCREDITATION

The Bachelor of Science and Doctor of Pharmacy programs are accredited by the American Council on Pharmaceutical Education. The school is a member of the American Association of Colleges of Pharmacy.

PROGRAMS

Professional. The Bachelor of Science in Pharmacy degree (B.S. Pharm.) is conferred upon candidates who have satisfactorily completed the three professional years of the program, have complied with all university regulations concerning degrees, and have been approved by the faculty of the School of Pharmacy.

The Doctor of Pharmacy degree (Pharm. D.) is conferred upon candidates who hold the B.S. Pharm. degree from a program accredited by the American Council on Pharmaceutical Education, have satisfactorily completed the academic requirements of the program, have complied with all university regulations concerning degrees, and have been approved by the faculty of the School of Pharmacy.

Graduate. Departments in the school offer programs of graduate study leading to the degrees of Master of Science (M.S.) and Doctor of Philosophy (Ph.D.). Students may specialize in biopharmaceutics, pharmaceutical chemistry, and pharmacy administration.

Interested students with graduate study potential should consult the appropriate department chairman. Information on procedures and policies for graduate studies can be found in the *VCU Graduate Bulletin*.

LICENSING AND RECIPROCITY

The Virginia Board of Pharmacy holds qualifying examinations for licensure twice yearly. Applicants for the examination must

present evidence that their first professional degree was granted by a school of pharmacy recognized by the board. This school is among those recognized.

To be licensed as a pharmacist in Virginia, an applicant must present to the Virginia Board of Pharmacy evidence of six months of satisfactory experience in pharmacy under the direct supervision of a pharmacist, four months of which is gained by completion of the third professional year clerkship program. Experience is not a requirement for graduation in pharmacy from Virginia Commonwealth University.

An applicant who intends to qualify for reciprocity must, at the time of licensure in Virginia, present to the Virginia Board of Pharmacy evidence of nine months of satisfactory experience under the direct supervision of a pharmacist. Virginia has reciprocity with all states except California, Florida, and Hawaii.

Those students who intend to be licensed in Virginia should contact the Virginia Board of Pharmacy, 517 West Grace Street, Richmond, VA 23261.

ADMISSION REQUIREMENTS—B.S. PROGRAM

Applicants for admission to the School of Pharmacy must attend an accredited college for at least two academic years (six quarters or four semesters) prior to admission.

Students planning to enter an accredited college upon high school graduation should plan their high school program to meet the requirements for admission in the college where they will take the prerequisite work for admission to pharmacy. High school programs rich in mathematics and the sciences provide excellent preparation for the study of pharmacy.

The minimal admission requirements are listed below. (Meeting these requirements does not, however, guarantee acceptance into the VCU School of Pharmacy.)

A. A statement affirming the applicant's good moral character signed by one or more pharmacists, physicians, or former teachers may be requested by the Admissions Committee.

B. An official high school transcript and official transcripts from all colleges attended. Applications are considered by the Ad-

missions Committee only after transcripts on file show completion of no less than two semesters or three quarters of work. When offered, an acceptance is contingent upon satisfactory completion of specific work that may be in progress.

C. Academic Prerequisites. Applicants must offer the required credits in the following subject areas for a total of at least 65 semester hours (97.5 quarter hours).

	Semester Hours	Quarter Hours
Biology (lecture and laboratory) . .	8	12
General Chemistry (lecture and laboratory)	8	12
Organic Chemistry (lecture and laboratory)	8	12
Physics (lecture and laboratory) . .	8	12
English	6	9
Mathematics	6	9
Economics	3	4.5
Electives	18	27
TOTAL	65	97.5

In order to satisfy the mathematics requirement, applicants must offer credits in college-level algebra and trigonometry, and are urged to complete at least one semester of calculus. Applicants who satisfied the algebra and/or trigonometry requirements before entering college must still offer six college credits in mathematics.

All elective credits must be in liberal arts or behavioral sciences (natural sciences, business, or physical education are not accepted).

In unusual cases, students may be admitted subject to completion of course credit prior to graduation.

D. Applicants must have earned a creditable average ("C" or better) overall, or in the courses specified, to meet minimum academic requirements for admission.

E. Applicants for admission must submit a completed application form; this form requires that the names of four individuals be given, including at least two teachers (preferably in the sciences) qualified to assess the applicant's ability to complete the curriculum in pharmacy.

F. The dean and the committee on admissions may require a personal interview with the applicant.

G. Applicants are urged to take the Pharmacy College Admission Test in May of the year before admission, or as soon thereafter as possible.

H. Students are admitted only at the start of the academic year. Applications are accepted upon completion of one full year of

college work. The Admissions Committee begins reviewing applicants during October of the year preceding admission. It is to the applicant's advantage to apply during the summer of the year before expected enrollment in the School of Pharmacy.

Further information and application materials may be obtained by writing to the Chairman, Admissions Committee, School of Pharmacy, Virginia Commonwealth University, Box 581, MCV Station, Richmond, VA 23298.

ADMISSION REQUIREMENTS— DOCTOR OF PHARMACY PROGRAM

A. Applicants must be graduates of, or enrolled in the final year of a B.S. in Pharmacy program which is accredited by the American Council on Pharmaceutical Education.

B. Evaluations by professors in the School of Pharmacy of the applicant's moral character, personal qualities, and academic and intellectual potential must be provided.

C. Verbal, quantitative, and analytical scores from a recent Graduate Record Examination must be submitted. (In exceptional circumstances, requests to waive this requirement will be considered.)

D. The Committee on Admissions may require a personal interview with the applicant.

Further information and application materials may be obtained by writing to the Chairman, Pharm. D. Admissions Committee, School of Pharmacy, Virginia Commonwealth University, Box 581, MCV Station, Richmond, VA 23298.

CURRICULUM—B.S. PROGRAM¹

FIRST PROFESSIONAL YEAR (THIRD COLLEGE YEAR)

First Semester	Semester Hours
PHC 410	4
PHA 301	5.5
PHA 311	3
PHA 331	3
ANA 401	4.5
	20

¹This is the curriculum for students admitted in 1983. Students admitted in 1981-82 will complete the curriculum described in the 1982-83 bulletin.

Second Semester

PHC 302	3
PHA 302	4.5
BIC 402	5.5
PIO 482	5
	18

SECOND PROFESSIONAL YEAR
(FOURTH COLLEGE YEAR)

First Semester

PHA 401	5.5
PHA 403	3
PHC 403	3
PMC 403	4
MIC 401	4.5
	20

Second Semester

PHA 413	2
PHA 432	4
PHA 442	3
PHC 404	4
PMC 404	4
	17

THIRD PROFESSIONAL YEAR
(FIFTH COLLEGE YEAR)

First Semester

PHA 503	3
PHA 533	3
PHA 511	5
EDU 510	3
Electives	2- 3
	16-17

Second Semester

PHA 512	17
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In some instances, students in the third professional year may be obliged to travel and reside some distance from Richmond as part of the program. No refund of payments for tuition, fees, or other purposes may be expected by the students in this event, if credit is granted for the time spent in this phase of the program. No stipends may be earned by the students in connection with any professional practice program for which the school grants credit. The clerkship program is 17 weeks long and covers the second semester including the week of the spring semester break.

PHARM. D. CURRICULUM

The Doctor of Pharmacy curriculum has the flexibility to adapt to the needs of students from varied backgrounds with differing objectives. In general, a student who has met the requirements of the baccalaureate program will, during four semesters and a summer, complete a minimum of 75 semes-

ter hours, including the following required courses, clinical experiences, and research.

BIS 511	3
PHA 650	1
PHA 662	3
PHA 690	2
PHA 622	3
PHA 631	3
PHA 633	3
PHA 635	3
PHA 636	3
PHA 637	2
PHA 638	2
PHA 692	2
PHA 693-696	33
PHA 697	7

ACADEMIC REGULATIONS

Matriculation in the School of Pharmacy implies a willingness on the part of students to comply with university rules and regulations and to conduct themselves in a manner befitting members of the profession the students seek to enter. The program of study, and regulations regarding courses of study, student conduct, etc., are subject to modification without notice. All rules and regulations set forth in this bulletin, as well as other statements issued by administrative officers of the university, apply until further notice.

Probation. Students may be placed on probation by either the Committee on Admissions or the Committee on Promotions. Probation is a status indicating that the student's scholarship is deficient and is expected to be improved to a level considered to be satisfactory by the faculty. Students are also placed on probation if two deficiencies are included in the work of any semester, including final grades. Students who fail to meet probationary stipulations may expect to have their normal progress through school interrupted. They may be required to attend summer school, to repeat a year, or to withdraw. Students on probation are not eligible to be nominated for offices in the student government nor to represent the school in athletics or other extracurricular activities. Students on probation are expected to stop, or drastically curtail, any outside employment. Detailed regulations on probation are sent to all students on probation and are available on request.

Outside Work. Employed students ranking in the lower half of their classes may receive a notice from the faculty requesting that outside work be curtailed or eliminated. In general, the faculty believes that students should give first priority to their school work. Students able to maintain academic standing are not restricted with respect to outside employment.

Honor Code. All students are governed by the honor code and regulations of the student body organization. A detailed description of the Honor Council's rules of procedure is available upon request.

FACULTY ADVISING PROGRAM

A faculty advisor is appointed by the dean for each new class entering the school in the Bachelor of Science program. The advisor continues in this role until the class graduates.

A faculty advisor is assigned to each Pharm. D. student.

There is a faculty advisor to the Interfraternity Council, as well as an advisor for each of the professional pharmacy fraternities.

Each of the student chapters of professional pharmacy organizations on campus operates with a faculty advisor.

ATTENDANCE REGULATIONS

1. The faculty considers attendance at lectures, laboratories, and other functions a requisite to the successful acquisition of the knowledge and skills required of the professional pharmacist. Hence, the faculty cannot condone absence without good reason from any regularly scheduled educational experience.

2. A student who is absent for unavoidable reasons should report the absence to the dean's office within 24 hours after returning to class. Absences not reported within the 24-hour period will not be excused. The absent student is expected to make up all missed work.

3. At the start of each course, the instructor will explain to the class the attendance regulations for that semester. The nature of make-up work in the event of absence will be prerogative of the instructor.

4. Unexcused absences exceeding one per semester hour allow the instructor to reduce

the earned grade by one level. Further grade reductions at the same rate may be made for succeeding blocks of unexcused absences.

5. A grade of zero will be given when an absence from a quiz, test, or examination is not excused.

PROMOTION

Attending pharmacy school is not a right acquired simply by conforming with the entrance requirements and paying the tuition fees. Tuition fees do not defray the total cost of a pharmaceutical education, since part of the cost comes from the state and other sources. It is, therefore, a privilege granted to certain qualified persons so that society's need for pharmacists may be fulfilled. The persons to whom this privilege should be granted are, naturally, those who will make the best pharmacists. It is for this reason that the dean and the Committee on Promotions, composed of the students' instructors during the year, require the marginal or failing performance be improved, or that the student withdraw from school. The most careful consideration is given during both the admissions process and the promotions process not only to the student's grades but also to his or her probity, industry, scholastic ability, and inclinations.

The following principles outline the prominent features of the promotions process:

1. Students who have passed the work of an academic year in a satisfactory manner usually are advanced to the next higher class, provided there are no contravening reasons that make this undesirable.

2. The Committee on Promotions thoroughly reviews the academic record of each student who fails to pass a course, or who does not maintain a grade-point average of 2.0 or better. Following this review, the committee may, depending upon individual circumstances, promote a student on a probationary basis, require the student to repeat all or a part of previous work, or terminate the student's enrollment.

3. A student with course deficiencies will not be allowed to enter the final year of the program.

4. Students who fail two or more subjects ordinarily are continued in enrollment only under exceptional circumstances.

5. Students who fail to meet conditions of

probation may be asked to withdraw or repeat a year's work.

The above guidelines are not absolute rules, but they indicate what action may be taken in a particular case. The dean and the Committee on Promotions remain entirely free to pass upon each case according to its merits.

Criteria for promotion in the Pharm.D. program are available from the director of the Pharm.D. program.

WITHDRAWAL

Students finding it necessary to withdraw from the School of Pharmacy must comply with the provisions for withdrawal in Part I.

The dean of the School of Pharmacy will not approve a request for withdrawal until the student has submitted a letter of resignation.

Students withdrawing without approval and failing to check out laboratory lockers will be assessed a \$5 checkout charge for each locker in addition to any charges resulting from the need to replenish the contents of the lockers.

Students seeking readmission to the School of Pharmacy will be evaluated on their total academic record. Applicants for readmission to the first professional year will not be given priority over new applicants, but must compete with them on an equal basis. Readmission in advanced standing will be considered on a space-available basis.

GRADUATION

Students are recommended and approved for the Bachelor of Science in pharmacy or Doctor of Pharmacy degrees by the faculty of the School of Pharmacy.

Candidates for the **B.S. in Pharmacy degree** must meet the following requirements:

1. Be of good moral character.
2. Complete satisfactorily all the required work in a timely fashion, which will not normally exceed five years from the date of initial enrollment.
3. Pay all fees.
4. Complete the last year's work for the degree in residence in this school.
5. Be present at the commencement exercises unless excused by the dean in writing.

Candidates for the **Pharm.D. degree** must

meet the following requirements:

1. Be of good moral character.
2. Successfully complete a minimum of 75 semester hours in advisor-approved courses.
3. Maintain an overall grade-point average of at least 2.5 and a grade-point average of 3.0 in the required (core) curriculum.
4. Complete, to the satisfaction of the Research Committee and faculty, all phases of a research project including a written report approved by the student's research committee.
5. Complete satisfactorily the minimum number of required clerkship rotations and demonstrate the attainment of minimum competencies.
6. Fulfill all requirements of the university, including payment of all fees, and be present at official commencement exercises unless specifically excused by the dean in response to a written request.
7. Complete all requirements for graduation within four calendar years from the date of admission to the program.

HONORS, AWARDS, AND ORGANIZATIONS

Rho Chi. This national honorary pharmaceutical society established Lambda Chapter at MCV in 1929. Charters for chapters of this organization are granted only to groups in colleges that are members in good standing of the American Association of Colleges of Pharmacy. Election to membership in the society is based on high attainment in scholarship, character, personality, and leadership. Students become eligible for consideration during the second professional year of the pharmacy program.

Lambda Chapter annually awards certificates in recognition of outstanding scholarship to students who have completed the pre-pharmacy and first professional year pharmacy curriculum. Also, Lambda Chapter selects one member of the senior class who is recognized for excellence in scholarship, leadership, personality, and character. The name is inscribed on a plaque displayed in the School of Pharmacy.

A. D. Williams Awards. One outstanding student in each of the first three professional years in pharmacy receives an A. D. Williams Scholastic Achievement Award. This award is given in recognition of the highest

academic achievement in the class. The award consists of an honorarium and an engraved certificate of acknowledgement.

Virginia Pharmaceutical Association Scholarship Awards. The Virginia Pharmaceutical Association, wishing to encourage excellence in scholarship among students of pharmacy, established three scholarship awards for graduating seniors. The first, known as the Wortley F. Rudd Award, is presented to the student with the highest overall average. The second, known as the William G. Crockett Award, is presented to the senior student who earns the highest average in pharmacy courses. The third, known as the Frank P. Pitts Award, is presented to the senior student who earns the highest average in chemistry courses.

Virginia Pharmaceutical Association Student Service Award. An award, consisting of a plaque and an honorarium, which is presented to the graduating senior who has been of greatest service to the profession.

The Merck Award. An award, consisting of the current editions of the *Merck Index* and *The Merck Manual*, is presented to a graduating senior. The award is based on the highest grade-point average improvement over the first three professional pharmacy years. One award is presented for each 50 graduates.

The Upjohn Award. An award, consisting of a plaque and an honorarium, given to the graduating senior who has been selected for outstanding contributions in public service while enrolled as a student in the School of Pharmacy.

Student American and Virginia Pharmaceutical Association. Students in the School of Pharmacy have an opportunity to become members of this national and state-affiliated organization. The group meets regularly, presenting programs of interest to the student body.

Student Chapter Virginia Society of Hospital Pharmacists. Pharmacy students who are interested in the practice of hospital pharmacy may become members.

Professional Fraternities. Chapters of Phi Delta Chi, Kappa Psi, and Kappa Epsilon are active within the student body. These fraternities extend invitations, according to the rules of the Interfraternity Council, to pharmacy students to become members.

Eligibility for consideration is based upon academic achievement as determined by the Interfraternity Council and the dean's office.

FINANCIAL AID

See Financial Assistance section in Part I.

COURSES OF INSTRUCTION

Department of Pharmaceutical Chemistry (PHC)

Professors: Kier (Chairman); Andrako; Richard; Stubbins

Associate Professors: Boots; Glennon; Van't Riet; Windridge

Assistant Professors: Soine; Westkaemper

Instructor: Harvie

302 Organic Pharmaceutical Chemistry. Semester course; 3 lecture hours. 3 credits. Prerequisite: one year of organic chemistry. This course integrates the chemical and physical properties of organic molecules with biological effects. Particular emphasis is placed on heterocyclic chemistry, mechanisms of enzymatic reactions, and stereochemistry as they relate to drug action and toxicity. Certain physico-chemical phenomena are described which pertain to biological events.

309 Introduction to Radiopharmaceuticals. Semester course; 3 lecture hours. 3 credits. The properties of radionuclides and the interaction of various forms of radiation with biological systems are reviewed. The preparation, handling, and quality control, as well as diagnostic and therapeutic applications of radiopharmaceuticals are discussed.

403 Organic Pharmaceutical Chemistry. Semester course; 3 lecture hours. 3 credits. Prerequisite: PHC 302. A study of synthetic and natural organic compounds of medicinal and pharmaceutical interest with emphasis being placed on physical and chemical properties and on the relationships between chemical structure and pharmacological activity.

404 Organic Pharmaceutical Chemistry. Semester course; 4 lecture hours. 4 credits. Prerequisite: PHC 403. A continuation of PHC 403.

410 Principles of Pharmaceutical Analysis. Semester course; 2 lecture and 4 laboratory hours. 4 credits. A study of the underlying principles and practical limitations of drug analysis procedures with emphasis on those techniques which are most applicable to the quantitation of drugs in biological fluids. The laboratory work involves familiarization experiments and actual assays employing a variety of chromatographic and photometric procedures. In addition, the students will learn to perform colorimetric and chromatographic identification tests for abused drugs.

411 Physical Chemistry. Semester course; 3 lecture hours. 3 credits. Co-requisite: calculus. A first course in physical chemistry with emphasis on those topics most relevant to the health sciences, including electrolyte solution theory, kinetics, and the physical chemistry of macromolecules.

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412 Physical Chemistry. Semester course; 3 lecture hours. 3 credits. Prerequisite: PHC 411. A continuation of PHC 411.

413 Experimental Physical Chemistry. Semester course; 4 laboratory hours. 2 credits. Co-requisite: PHC 411. The laboratory work includes a number of basic experiments in physical chemistry along with techniques and procedures of special interest to students in the health sciences.

414 Experimental Physical Chemistry. Semester course; 4 laboratory hours. 2 credits. Prerequisite: PHC 413. Co-requisite: PHC 412. A continuation of PHC 413.

506 Advanced Medicinal Chemistry I. Semester course; 3 lecture hours. 3 credits. A study of pharmacodynamics, theories relating to drug action, and the general principles of drug design.

521 Drug Assaying. Semester course; 2 lecture and 4 laboratory hours. 4 credits. A consideration of the chemical assaying of U.S.P. and N.F. preparations, including synthetic and naturally occurring drugs.

526 Research Techniques in Pharmaceutical Chemistry. Semester course; 0-2 lecture and 2-8 laboratory hours. 1-4 credits. The theory and application of classical and instrumental techniques used in pharmaceutical research are presented.

531 Medicinal Chemistry for Nurse Anesthetists I. Semester course; 4 lecture hours. 4 credits. A review of the principles of organic chemistry and bio-organic chemistry with emphasis on the concepts necessary for an understanding of PHC 532.

532 Medicinal Chemistry for Nurse Anesthetists II. Semester course; 3 lecture hours. 3 credits. Prerequisite: PHC 531 or equivalent. A series of lectures covering the structure-activity relationships, metabolism, and mechanism of action of selected agents.

607 Advanced Medicinal Chemistry II. Semester course; 3 lecture hours. 3 credits. A study of the structure-activity relationships and mode of action of selected groups of drugs.

622 Stereochemistry. Semester course; 2 lecture hours. 2 credits. A study of the number and kinds of stereoisomers of organic compounds and the differences in chemical and physical properties between stereoisomers.

632 Heterocyclic Chemistry. Semester course; 3 lecture hours. 3 credits. A series of lectures covering a number of the more important heterocyclic systems.

681 The Ultracentrifuge. Semester course; 2 lecture hours. 2 credits. The optical systems of the ultracentrifuge are discussed, as well as the application of the ultracentrifuge in the study of the properties of macromolecules such as proteins and nucleic acids.

690 Departmental Research Seminar. Semester course; 1 lecture hour. 1 credit. Current problems and developments in pharmaceutical and medicinal chemistry are discussed by visiting lectures, staff, and students.

691 Special Topics in Pharmaceutical Chemistry. Semester course; 1-4 lecture hours. 1-4 credits. Lectures, tutorial studies, and/or library assignments in selected areas of advanced study not available in other

courses or as a part of the research training.

697 Directed Research in Pharmaceutical Chemistry. Semester course, 1-15 credits. Research leading to the M.S. or Ph.D. degree.

Department of Pharmacy and Pharmaceutics (PHA)

Professors: Barr (Chairman); Lowenthal; Ruggiero; Wood

Associate Professors: Garnett; Garrettson; Hepler; Hirsch; Jacoby; McKenney; Pierpaoli; Reinders; Salter; Small; Smith; White, C.E.

Assistant Professors: Comstock; Dodini; Hayes; Hillard; Mullins, P.; Myers; Polk; Poynor; Rock; Smith, M.

Assistant Clinical Professors: Anderson; Emswiller; Meltzer; Morgan; Painter; Robertson; White, E. V.

Instructors: Jordan; Ashley

Clinical Instructors: Adams; Akers; Albright; Allen, D.; Allen, R.; Atkins; Bahlman; Bain; Baker; Barbatti; Barlow; Berryman; Blakewood; Blanton, A.; Blevins; Bradley; Brown, H. C.; Brown, O.; Brown, R.; Burns; Carlson; Carson; Chapman; Chatelain; Colgan; Davis, C.; Davis, L.; Davis, R.; Dennis; Dillon; Dugger; Edloe; Fields; Fridley; Fritz; Gallahan; Garabedian; Garland; Hancock, D.; Hancock, R.; Harmon; Hasty; Herbert; Holzbach; Hughes; Humphries; Jeter; Johnson, A.; Johnson, J. G.; Johnson, J. S.; Johnston; Jones; Kahn; Kennedy; Konnor; Leitinger; Lindamood; Long; Marshall; Martin; McCollum; Metz; Miller; Mink; Muha; Mullins, L.; Necessary; Northington; Padgett; Parker; Parrish; Pesko; Pelham; Pickard; Prieston; Reavis; Reinhardt; Rhodes; Richards; Riffe; Robbins; Rogers, E.; Rogers, R.; Rollings; Rosner; Rotz; Schroeder; Shasky; Smith; Spellman; Stewart; Tatum; Ternullo; Thomas; Thompson; Thweatt; Varalli; Watkins; Weber; Welk; Whiten; Wiatt; Windmuller; Varalli

301 Principles of Pharmacy I. Semester course; 4 lecture and 3 laboratory hours. 5.5 credits. (Changes to 3 lecture and 3 laboratory hours and 4.5 credits in 1984.) A study of the chemical, physicochemical, and biopharmaceutical principles fundamental to the development and use of medication dosage forms. Pharmaceutical calculations and technology required to compound and dispense dosage forms for prescription orders are presented. Includes discussion of metrology, theory of solutions, kinetics, biopharmaceutics, colloidal systems, and suspensions.

302 Principles of Pharmacy II. Semester course; 3 lecture and 3 laboratory hours. 4.5 credits. (Changes to 4 lecture and 2 laboratory hours and 5 credits in 1984.) A continuation of PHA 301.

311 Principles of Law—Pharmacy and Drug Laws. Semester course; 3 lecture hours. 3 credits. A consideration of law as it affects the practice of pharmacy, including a study of state and federal laws that relate to drugs.

331 Introduction to Pharmacy Practice. Semester course; 2 lecture and 1 laboratory hour. 3 credits This

course acquaints students with roles and functions of pharmacists within traditional and innovative health care systems. Students will observe settings in which health care is provided. Requirements for different types of pharmacy practice will be discussed.

401 Principles of Pharmacy III. Semester course; 4 lecture and 3 laboratory hours. 5.5 credits. (Changes to 3 lecture and 2 laboratory hours and 4 credits in 1985.) Prerequisite: PHA 302. The course is a continuation of PHA 301 and 302. The physico-chemical, pharmaceutical, and biopharmaceutical principles underlying the compounding and use of aerosols, emulsions, topical products, suppositories, powders, granules, capsules, and tablets are presented. Factors affecting the bioavailability of these dosage forms are discussed. In the laboratory the students learn compounding and dispensing skills related to oral, topical, and I.V. dosage forms, the use of the telephone in receiving prescription orders, and the utilization of a patient medication profile system.

402 Principles of Pharmacy IV. Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisite: PHA 401. A continuation of PHA 401.

403 Principles of Pharmacy Practice Management. Semester course; 3 lecture hours. 3 credits. This course describes social, behavioral, and economic theories pertinent to the management of pharmacy practices in community, hospital, and other settings.

413 Biopharmaceutics and Pharmacokinetics. Semester course; 2 lecture hours. 2 credits. Co-requisite: PHA 401. The general kinetics of drug absorption, distribution, and elimination are discussed in detail. The principles are applied to examine the role of the dosage form on the rate and extent of absorption. Physiological factors affecting biologic disposition of drugs are characterized by pharmacokinetics.

420 Drug Education. Semester course; 3 lecture hours. 3 credits. A course in drug use education for health educators, emphasizing the safe and effective use of prescription and nonprescription drugs in the overall treatment of illness. Didactic presentations will focus on principles and concepts of drug action and therapeutic indications for selected drugs and drug classes. Drug abuse, drug dependence, rehabilitation methods, and prevention programs will also be discussed. The student will be able to apply educational methodologies to this content area.

432 Orientation to Disease States. Semester course; 4 lecture hours. 4 credits. An introduction to human diseases emphasizing their etiology, pathogenesis, course, and clinical manifestations.

442 Drug Literature Evaluation. Semester course; 3 lecture hours. 3 credits. The student is taught to retrieve and to evaluate the validity of published studies, and to apply principles of biostatistics in the design and evaluation of clinical drug research studies.

501 Pharmacy Administration. Semester course; 4 lecture hours. 4 credits. A study of marketing as related to the drug industry and pharmacy. Techniques involved in establishing and maintaining a practice of pharmacy. Elements of accounting adapted to the needs of the pharmacist are included in the discussion.

503 Applied Pharmacy Practice Management. 3 lecture hours. 3 credits. Prerequisite: PHA 403. Application of theoretical concepts to the practical management of pharmaceutical services will be discussed.

511 Pharmacotherapeutics. Semester course; 4 lecture and 2 laboratory hours. 5 credits. Clinical pharmacology, clinical chemistry (laboratory tests), and social aspects of health care are discussed. Clinical conferences and assigned reading cover therapeutic topics in the medical and pharmaceutical literature. Interdisciplinary patient care is stressed by participation in hospital ward rounds.

512 Professional Practice. 17 credits. The course is divided into four clerkship periods in which students participate in interdisciplinary patient care in the teaching institution and practice situations in community and hospital pharmacies. Emphasis is placed on the team approach to health care and the development of skill in all aspects of contemporary pharmacy practice. Included are student-patient interviews, rational drug therapy, drug information retrieval, modern drug distribution systems, and practice management.

531 Pharmaceutical Product Development. Semester course; 2 lecture and 4 laboratory hours. 4 credits. A study of the pharmaceutical, physicochemical, biopharmaceutical, and engineering principles and technology underlying the development of various pharmaceutical dosage forms for hospitals and industry.

532 Pharmaceutical Product Development. Semester course; 2 lecture and 4 laboratory hours. 4 credits. A continuation of PHA 531.

533 Nonprescription Medication. Semester course; 3 lecture hours. 3 credits. The pathological and clinical manifestations of disease states that lead to self-medication are discussed. Stress is placed on critical evaluation and rational use of nonprescription drug products promoted for patient selection and self-medication.

541 Pharmaceutical Ethics. Semester course; 2 lecture hours. 2 credits. A study of the current practice and philosophy of pharmacy. (Graded pass or fail.)

552 Hospital Pharmacy Administration. Semester course; 3 lecture hours. 3 credits. An introductory course dealing with hospital pharmacy administration. Subject matter includes the responsibilities, services provided, systems, methodologies, and administrative principles used by pharmacists to coordinate and to direct hospital pharmacy operations.

591 Special Topics in Pharmacy. Semester course; 1-4 credits. An elective course in which students may participate in research projects or undertake special studies, through tutorial arrangements and/or library assignments, in the several areas of the pharmaceutical sciences. (Graded pass or fail.)

601 Advanced Pharmaceutical Product Development. Semester course; 3 lecture and 4-10 laboratory hours. 5-8 credits. An advanced study of the pharmaceutical, physicochemical, and engineering principles and technology underlying the development of various pharmaceutical dosage forms.

602 Advanced Pharmaceutical Product Development.

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Semester course; 3 lecture and 4–10 laboratory hours. 5–8 credits. A continuation of PHA 601.

608 Clinical Radiopharmacy. Semester course; 1 lecture and 2 laboratory hours. 2 credits. Students receive training in the safe use, preparation, calibration, quality control, and clinical diagnostic use of current and investigational radiopharmaceuticals in nuclear medicine practice. Emphasis will be placed on obtaining patient medication histories for the evaluation of agents capable of *in vivo* and *in vitro* radioisotopic test modification.

611 Advanced Physical Pharmacy. Semester course; 3 lecture and 0–4 laboratory hours. 3–5 credits. Detailed application of physicochemical principles to areas of pharmaceutical interest, including colloids, rheology, phase rule, complexation, kinetics, drug stability, and micromeritics.

612 Advanced Physical Pharmacy. Semester course; 3 lecture and 0–4 laboratory hours. 3–5 credits. A continuation of PHA 611.

621 Advanced Biopharmaceutics and Drug Disposition. Semester course; 2 lecture hours. 2 credits. Study at the advanced level of the relationships between the physicochemical properties of a drug and dosage form and the absorption, distribution, elimination, and pharmacological effects of the drug. Current theory and methodology involved in solving problems at the research level are emphasized.

622 Clinical Pharmacokinetics. Semester course; 2 lecture and 0–2 laboratory hours. 2–3 credits. The application of current pharmacokinetic theory to clinical problems involved in optimizing and monitoring drug use in patients. Particular attention is given to adjustment of drug dosage in individual patients with impaired drug elimination due to renal and hepatic dysfunction.

624 Pharmacokinetics. Semester course; 2 lecture hours. 2 credits. An advanced treatment of the kinetics of drug absorption, distribution, and elimination utilizing mathematical models, analog, and digital computers for analysis of linear and nonlinear biologic systems.

625 Biopharmaceutic Assay. Semester course; 2 lecture and 2–6 laboratory hours. 3–5 credits. Theory and laboratory practice for systematic quantitative and qualitative analysis of drugs and metabolites in body fluids and tissues. Emphasis is on modern analytical methodology used in pharmacokinetic and biopharmaceutic studies.

626 Biopharmaceutic Assay. Semester course; 2 lecture and 6–10 laboratory hours. 5–7 credits. A continuation of PHA 625 with particular emphasis on the identification of drug metabolites.

631 Advanced Pharmacy Practice Management. Semester course; 3 lecture hours. 3 credits. Major issues and problems related to the effective management and coordination of a contemporary institutional pharmacy service program are discussed largely in the context of hospital organizational structure and dynamics. Emphasis is placed on the social, political, and economic forces impinging on the modern hospital organization and its pharmacy service programs.

632 Advanced Pharmacy Practice Management. Semester course; 3 lecture hours. 3 credits. The planning

and development of a total program in institutional drug use control is stressed with emphasis on current human and fiscal resource management theories and applications. Current management problems unique to institutional pharmacy practice are stressed.

633 Adverse Drug Reactions. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Epidemiology and etiology of drug-related, iatrogenic diseases are discussed. Detection, clinical evaluation, and appropriate management as well as methodology for the prevention of adverse drug reactions are emphasized. Students are required to participate in group discussions and to give presentations based on current literature. Students receive clinical exposure to the detection, evaluation, and management of drug-induced diseases.

635 Advanced Clinical Pharmacy. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: PHA 511. The rational choice of drugs with respect to disease conditions is discussed. Emphasis is placed on clinical differences between drugs. Clinical application of biopharmaceutics, pharmacokinetics, therapeutic effectiveness, drug interactions, and adverse effects are stressed. Students make case presentations to illustrate drug therapy in disease states.

636 Advanced Clinical Pharmacy. Semester course; 2 lecture and 2 laboratory hours. 3 credits. A continuation of PHA 635.

637 Advanced Clinical Pharmacy. Semester course; 2 lecture hours. 2 credits. A continuation of PHA 635, 636.

638 Advanced Clinical Pharmacy. Semester course; 2 lecture hours. 2 credits. A continuation of PHA 635, 636, 637.

650 Drug Literature Evaluation. Semester course; 2 laboratory hours. 1 credit. This course shares lectures with PHA 442 but has more extensive and demanding conference sessions for the Pharm. D. student.

662 Application of Laboratory Values for Drug Therapy. Semester course; 2 lecture and 2 laboratory hours. 3 credits. The utilization of laboratory values as a part of the total evaluation of the patient with respect to drug therapy selection, consultation, and management.

690 Departmental Research Seminar. Semester course; 1 lecture hour. 1 credit. Required of all graduate students in pharmacy including students in the Pharm. D. program.

691 Special Topics in Pharmacy. Semester course; 1–4 lecture hours. 1–4 credits. Presentation of subject matter is by lectures, tutorial studies, and/or library assignments in selected areas of advanced study not available in other courses or as part of the research training.

692 Clerkship Teaching. Semester course; 1–4 credits. This course is designed to train Pharm. D. students to teach pharmacy students in clinical practice sites.

693–696 Advanced Practice. Semester course; 3–15 credits. A series of elective and required planned experiences to permit Pharm. D. students to utilize their knowledge of the pharmaceutical sciences in a variety of practice settings. Each course consists of one or more

month-long rotations, each carrying three semester hours of credit. Rotations within a course offer different experiences under the same or a different instructor. Enrollment in any of these courses requires the permission of the director of the Pharm. D. program. Rotations are offered in the following areas: inpatient medicine; primary ambulatory care; specialty ambulatory care; drug information; infectious disease; mental health; department program management; management support programs; clinical inpatient program management; clinical outpatient program management; pediatrics; pharmacotherapeutic consultation; pharmacokinetic consultation; nutritional support.

697 Directed Research in Pharmacy. Semester course;

1-15 credits. Research leading to the M.S., Pharm. D., or Ph.D. degree.

BASIC SCIENCES

Basic science courses are included in the pharmacy curriculum. See Basic Sciences section for details on the following courses and faculty.

Anatomy 401

Biochemistry 402

Microbiology and Immunology 401

Pharmacology 403, 404

Physiology 482



PART V—School of Nursing

ADMINISTRATIVE OFFICERS

JOAN F. BROWNIE, R.N., Ph.D.

Dean

ETHELYN E. EXLEY, R.N., Ed.D.

Assistant Dean, Academic Affairs

MARGARET R. SPAULDING, R.N., Ed.D.

Assistant Dean, Clinical Affairs and Resource Development

The School of Nursing originated in 1893 as part of the University College of Medicine. Since then, the educational program has evolved from a basic diploma program to multiple programs at the baccalaureate and master's degree levels. In addition, three nurse practitioner programs, an active research program, and continuing education opportunities are included. The School of Nursing continues to be a leader in nursing education in Virginia.

PHILOSOPHY OF NURSING

The School of Nursing supports the university's mission to provide a fertile and *stimulating* environment for teaching, learning, research, and service. The faculty of the School of Nursing have defined philosophies of nursing and nursing education. These philosophies were developed from an expression of mutual beliefs about human beings, human environments, health, the nature and scope of nursing practice, and the teaching-learning process underlying the education of professional nurses.

Nursing is a human service directed

toward assisting individuals, groups, and communities to strengthen adaptive responses to internal and external stressors in order to restore, maintain, and/or to promote the optimal state of health or facilitate a peaceful death. Nursing, as a practice discipline, is committed to the continuing evolution of the art and science of nursing through the use of nursing process and the development, implementation and dissemination of nursing theory, and research. Nursing realizes its goal of human service through diverse activities which include guiding people in practice of preventive health behavior, assisting ill individuals to regain their health and reduce their residual dysfunction, promoting environments which are beneficial to health, and eliminating stressors which are detrimental to health.

The School of Nursing's philosophy evolves from the following beliefs about man, his environment, and health.

Humans are biological, psychological, social, and spiritual beings who possess the capacity for rational thought and behavior. Each is unique in genetic endowment and life experiences. A dynamic interrelationship exists between body, mind, and spirit which is expressed as human wholeness. The dimensions of being and their interrelationships constitute human potential. Full human potential is realized through relationships with others.

All humans have a right to share in

society's resources in realizing their human potential. People also have the right to make decisions about their lives as long as they do not bring harm to others. With the right to make decisions comes the responsibility for the consequences of these decisions for the self and others.

Human environments possess internal and external dimensions. The internal environment consist of psychological, spiritual, and physiological elements; the external environment consists of all these influences outside of individuals, including social, cultural, physical, and biological systems. There is a dynamic, interdependent relationship between internal and external environments. People and their environments are within human control, people have the potential to change or to be changed by their environments.

Health is a dynamic state of human functioning whereby individuals, groups, and communities continually adapt to internal and external stressors in an attempt to achieve optimal health, which is the attainment of maximum potential for daily living. State of health may vary from optimal wellness to serious or terminal illness according to severity of environmental stressors, adaptive ability and access to resources. Healthy individuals, groups, and communities perceive themselves and are perceived by others to be functioning in an effective and integrated way. Because health is both self-defined and defined by others, conflicts in the definition of state of health may occur.

PROGRAMS

Bachelor of Science and Master of Science degree programs are offered through the School of Nursing. Continuing education offerings are numerous and are published separately. Information may be obtained by writing to the Director, Continuing Education Program, at the address given below.

Certificate programs to prepare family nurse practitioners, pediatric nurse practitioners, and obstetric-gynecologic nurse practitioners are included in the descriptions which follow.

Complete information regarding curriculum and admissions may be obtained by writing to the Office of the Dean, School of

Nursing, Virginia Commonwealth University, Box 567, MCV Station, Richmond, VA 23298.

FACILITIES AND RESOURCES

The faculty and administrative offices of the school are housed in the Nursing Education Building, 1220 East Broad Street. Additionally, this building has two nursing skills laboratories and four classrooms equipped with a full range of audiovisual equipment. Both graduate and undergraduate courses are scheduled also in the classrooms and laboratories of Sanger Hall, the principal building of the Schools of Medicine and Basic Sciences.

The clinical laboratories for nursing courses are conducted in the MCV Hospitals and in numerous other hospitals and health agencies in the area. Hospitals used on a regular basis are St. Mary's, Retreat, and the McGuire Veterans Administration Medical Center. Mental health facilities include Central State Hospital, Westbrook Psychiatric Hospital, Virginia Treatment Center for Children, Educational Therapy Center, Commonwealth Psychiatric Center, Crisis Intervention Center, and other facilities such as Richmond City Jail and Bon Air Learning Center for Girls. Facilities of the State Department for Public Health are used in Richmond, Petersburg, and Henrico County. The Instructional Visiting Nurses Association provides learning opportunities for a number of students as well. Students are given a diversity of experiences in hospital and community-oriented nursing.

ACCREDITATION

The baccalaureate degree program in nursing for students with no previous preparation in nursing and for graduates of diploma and associate degree programs is accredited by the National League for Nursing Department of Baccalaureate and Higher Degree Programs. The program is accredited also by the Virginia State Board of Nursing and graduates are eligible to take the licensing examinations for registration.

The master's degree program is accredited by the National League for Nursing Department of Baccalaureate and Higher Degree Programs.

NURSING ALUMNI

All graduates of the Medical College of Virginia School of Nursing, formerly St. Philips School of Nursing, and the Richmond Professional Institute nursing program are eligible for membership in the Nursing Alumni Division of the Medical College of Virginia of Virginia Commonwealth University. The purposes of the division are to support and promote the School of Nursing. The division also provides support within the university to promote and encourage the development of nursing services of the highest possible quality, to stimulate professional growth, and to promote cooperation and fellowship among nursing alumni and students.

ANNUAL LECTURESHIPS

Outstanding scholars are brought to the campus through a variety of resources. Students in the School of Nursing have access to special programs of an intellectual and cultural nature on both campuses of the university.

The **Annual Nursing Lectureship**, established in 1966 by contributions from alumni and friends of the School of Nursing, brings to the campus each year a person of national stature related to the field of nursing. Alumni and faculty plan and implement the lectureship which serves as an open forum to many publics in the health fields.

The **Yingling Visiting Scholar Program** was established in 1981 by alumni and friends of Dr. Doris B. Yingling upon her retirement in recognition of her many years of service as dean of the School of Nursing. The fund supports visits by eminent scholars to the School of Nursing.

HONORS AND AWARDS

Dean's List. Recognition of high quality academic achievement is made through inclusion on the Dean's List, published at the close of each semester. Students who have carried at least 12 semester hours' credit and who have earned a grade of 'C' or higher in all courses with an overall average of 3.5 or better are named to the Dean's List.

Sigma Theta Tau. The Medical College of Virginia School of Nursing Honor Society inducted its first members in the fall of 1976.

This local honor society was accepted as a chapter of the national nursing honor society, Sigma Theta Tau, in the fall of 1977. The chapter, known as Gamma Omega, installed its first members in the fall of 1978. The purposes of Sigma Theta Tau are to recognize superior achievement and leadership qualities, to foster high professional standards, and to strengthen commitment to the ideals and purposes of the profession.

Becky Godwin Fund. This fund was established by former Dean Doris B. Yingling in 1978 following completion of the Honorable Mills E. Godwin, Jr.'s, second term as Governor of Virginia. The fund was established in memory of former Governor and Mrs. Godwin's only daughter, Becky. The interest on the endowment contributed to the Medical College of Virginia School of Nursing by Dr. Yingling provides funds to enhance student professionalism in nursing for individuals enrolled in the undergraduate and graduate programs. Awards from the fund are made on an annual basis by the dean.

Yingling Senior Achievement Award. Gifts to the institution to honor former Dean Doris B. Yingling have been used to establish an annual award to a senior student in the School of Nursing. Recognition is based on outstanding leadership ability and potential professional growth as determined by a selection committee of faculty and students.

Mable Montgomery Award. This award was established through gifts of faculty and students in honor of Miss Mable E. Montgomery, executive secretary of the Virginia State Board of Nursing, 1949-70. The award alternates annually between a senior student and a faculty member. Leadership, excellence in nursing, and outstanding personal qualities are considered in selecting the recipients.

Marguerite G. Nicholson Award. This award was established by alumni and friends of the school to honor a beloved alumna and former faculty member. The award is presented annually to a graduating senior student who best demonstrates the humanitarian qualities of unselfishness, helpfulness to others, consideration, humility, and loyalty to the school.

Mayme B. Wilson Lacey Award. Established by alumni of the former St. Philip

School of Nursing, this award honors an outstanding alumna of the school who served for many years as assistant director of nursing services for MCV Hospitals. The recipient must be a well-rounded individual committed to nursing as a profession, who gives consistently good nursing care, has the ability to work well with the health team, and shows promise of supporting professional organizations.

Temple Memorial Award. The senior and junior classes, 1976–77, and the alumni from the School of Nursing established this award in memory of President and Mrs. T. Edward Temple. The award is given annually to a graduating student in the master's degree program. The recipient must possess characteristics that demonstrate exemplary performance in the advocacy role for the consumer of health care services and for the profession of nursing.

Martha M. Borlick Research Award. This award was established in 1980 by an alumna in honor of Dr. Borlick who served as chairman of the Department of Community Health Nursing from 1970–1978. The annual award honors a graduate student in nursing who demonstrates excellence in nursing research as evidenced by the master's thesis.

Baccalaureate Degree Program

ADMISSION REQUIREMENTS

Applications for admission are welcomed from men and women who have a sincere interest in preparing for a career in professional nursing. In selecting students for admission, the Admissions Committee looks for evidence of character, ability, maturity, and sound academic preparation. The committee attempts to choose applicants who give the greatest promise of profiting from the opportunities offered by the university and of preparing for a positive contribution to the practice of nursing and community life.

Applicants for admission must either be eligible for readmission or must be in good standing at the college last attended. Usually, only those credits earned within ten years preceding admission will be considered for transfer. In addition, credits must be applicable toward a degree at the institution in which they were earned.

A minimum of 60 semester hour credits with a quality-point ratio equivalent to 2.0 is required; however, a ratio of 2.5 on a 4.0 scale is recommended. Computation of the quality-point average utilizes academic courses only.

Foreign applicants who do not use English as their natural language must have a minimum TOEFL score of 550.

Procedures. Applicants are required to submit specific records in support of their applications. In order to allow sufficient time for the careful and thorough review given to each application, these records should arrive before February 1 preceding admission to the junior year. Applications may be obtained by writing the Director of Admissions, Medical College of Virginia, Virginia Commonwealth University, Box 632, MCV Station, Richmond, VA 23298, (804) 786-0488.

1. Formal application for admission to the junior year—Application to be completed by the applicant and submitted as early as possible after September 15 of the year preceding entrance.

2. Secondary school records—Should be sent directly to the Admissions Office by the school.

3. College transcripts—An official transcript of record listing all work must be submitted from each college attended, including summer sessions.

4. Course summary—Applicants are expected to provide a listing of courses (with titles) that they expect to complete during the year preceding admission to the School of Nursing.

5. Test results—All applicants must submit the results of the Scholastic Aptitude Test of the College Entrance Examination Board. If this test has been taken previously, it need not be repeated, but the earlier results must be submitted.

6. Self-evaluation—All applicants are expected to complete the self-evaluation form enclosed in the application kit.

7. Personal evaluation—Three evaluations are required of each applicant. Appropriate forms are provided.

8. Personal interview—Interviews are not routinely required but may be requested by the Admissions Committee. Applicants

desiring an interview should make an advance appointment.

9. Medical examination—A complete medical examination is required within six months prior to admission. Appropriate forms for the report will be provided.

Upon receipt of all required forms and records, the student's credentials are submitted to the faculty admissions committee for review and decision. Applications received prior to February 1 will be given priority for review and applicants notified by April 1.

Sufficient proficiency in mathematics for computing medication dosages is one requirement for satisfactory completion of NUR 359—Foundations for Nursing Practice and for admission to the nursing courses of the second semester. For this reason, following acceptance, the student will receive information for ordering a programmed instruction text in calculating drug dosages along with study guides. Students will be examined on this information during orientation week.

Registered Nurse Applicants. The School of Nursing provides an opportunity for registered nurses to be admitted to the baccalaureate program. Graduates from state-approved diploma programs and associate degree programs in nursing, who are currently licensed to practice, may be admitted for part- or full-time study. Registered nurse students must hold a Virginia license. Registration number must be sent with the applications.

Admission Requirements and Procedures. Refer to information above. The same lower division prerequisites are required of the registered nurse student as of the generic student.

In addition, the registered nurse applicant must supply an official copy of the nursing school transcript and an official copy of the State Board Examination scores.

Establishment of Credit. The registered nurse student may establish credit for courses in several ways: (a) through proficiency examinations as explained below; (b) through transfer of credit from other colleges; and (c) through taking courses as offered to generic students.

Proficiency examinations are of several kinds:

A. Those developed and distributed by

the College Entrance Examination Board. Information concerning these tests, called College Level Examination Program tests, may be obtained from the College Entrance Examination Board, 475 Riverside Drive, New York, New York 10027. These tests are available through the Academic Campus of Virginia Commonwealth University. They are given on a monthly schedule, and arrangements may be made for these tests one month prior to the testing date. Subject examinations are available in multiple areas as listed in information available from the College Entrance Examination Board (CEEB). Semester hour credit is granted and satisfactory scores are determined in accordance with the recommendations of the CEEB and vary with different subjects. Students may earn full course credit by examination for general education courses.

B. Those given by the faculty of the School of Nursing. These proficiency examinations in nursing and other closely allied courses include teacher-made and standardized examinations. Students may obtain study guides from the School of Nursing for review prior to the examination. Course credit is given upon successful performance on the examinations. Students may earn full course credit by examination for courses in the nursing curriculum shown below:

PMC 381	Health Science I
PMC 382	Health Science II
MIC 365	Infection and Immunity
NUR 339/439	Nursing of Adults
NUR 341	Human Nutrition
NUR 369/469	Nursing of Children
NUR 349/449	Psychiatric-Mental Health Nursing
NUR 335/435	Health Care Needs of Women

A charge is made for each examination to cover cost of materials.

Length of Program for Registered Nurses. The length of each registered nurse student's program within the major is determined by performance on the proficiency examinations. The maximum length of full-time study is two academic years on this campus.

It is possible, however, to complete the nursing major requirements in one calendar year. This special plan is for the registered nurse who establishes sufficient credit through proficiency examinations and starts in June with a six-week session. Upon satisfactory completion of the summer session, the registered nurse enters the senior year in August and completes requirements for a degree in two semesters.

In order to qualify for completion of the major in one calendar year, the registered nurse must have completed the liberal arts requirements before the final semester of the senior year. The Undergraduate Admissions and Advanced Standing Committee, composed of representatives from the faculty and student body of the Schools of Nursing and Basic Sciences, and the Department of Nursing, is responsible for the placement of students in the curriculum. Their decision is based on the performance of the applicant in all previous educational experiences and in the nursing proficiencies.

Once the liberal arts requirements have been procured or a plan for their acquisition is available, application should be made to the School of Nursing. Application materials should be requested following completion of 30 semester hours of college study of the fall before expected admission to the School of Nursing.

EVENING STUDY

An opportunity is provided for registered nurses to pursue part-time study in the evening. Further information concerning courses offered and the plan for obtaining a degree in this manner will be provided upon request.

CURRICULUM PLAN

The freshman and sophomore years of the baccalaureate degree program may be taken at the Academic Campus of VCU or at any other accredited junior or senior college. If the student attends another college to acquire the prerequisites, counseling is provided to assure the proper selection of courses. It is the applicant's responsibility to seek advice from the Admissions Office or the School of Nursing on courses taken prior to admission.

The student enters the MCV/VCU School

of Nursing with the status of junior for the study of clinical nursing and health sciences. Two years on the MCV Campus are necessary for generic students to complete the requirements for a Bachelor of Science in nursing degree.

For admission as a junior, the student must present a minimum of 60 semester hours. The following prerequisites apply for students entering in 1983:

	<i>Semester Hours</i>
COMMUNICATIONS	6
Required:	English composition, 3 SH.
Elective:	speech and/or literature, 3 SH.
HUMANITIES	12
Elective:	history, philosophy, logic, literature, art, music, drama, religion, or foreign language.
SOCIAL SCIENCES	12
Required:	general psychology, 3 SH. developmental psychology, 3 SH. ¹ general sociology, 3 SH, family, 3 SH.
NATURAL SCIENCES	19-22
Required:	general chemistry, 8 SH. human anatomy and physiology, 5-8 SH. ² microbiology, 3 SH. nutrition, 3 SH.
MATHEMATICS	3
	Statistics preferred; algebra or computer science courses accepted.
OTHER ELECTIVES	5-8
	No more than three credits in an activity course accepted
Total semester hours credit	60

A typical program in the upper division curriculum is as follows:

<i>Junior Year, First Semester</i>		
NUR 341	Human Nutrition	2
NUR 359	Foundations for Nursing Practice	8
MIC 365	Infection and Immunity	3
PMC 381	Health Science I	4
		17

¹ Child or adolescent psychology acceptable.
² Students enrolled in a college that does not offer an appropriate course in human anatomy and physiology may take this in the VCU summer session between the freshman and sophomore years.

Junior Year, Second Semester

¹ NUR 349/449	Psychiatric-Mental Health Nursing	6
¹ NUR 339/439	Nursing of Adults	7
NUR 372	Theory of Family and Group for Nursing Practice	2
PMC 382	Health Science II.	3
		<u>18</u>

Senior Year, First Semester

¹ NUR 335/435	Health Care Needs of Women	6
¹ NUR 369/469	Nursing of Children	6
NUR 471	Managerial Theory for Nursing Practice	3
NUR 478	Introduction to Public Health Science	2
		<u>17</u>

Senior Year, Second Semester

NUR 472	Dimensions of Professional Nursing	2
NUR 479	Leadership and the Nursing Process	5
NUR 480	Experiential Management Seminar	1
NUR 489	Community Health Nursing	5
	Elective	<u>2-3</u>
		15-16

All courses listed for the first three semesters within the upper division are prerequisite to the fourth semester. Other prerequisites are shown in course descriptions.

In addition to the course requirements of the lower and upper divisions, *it is expected that students complete a course in first aid and cardiopulmonary resuscitation prior to graduation.* If the course can be completed before admission to the upper-division major, it is desirable.

The School of Nursing reserves the right to restrict enrollment in clinical courses to matriculated nursing students seeking a Bachelor of Science degree. Enrollment in all clinical nursing courses is based on availability of space in these courses.

The School of Nursing is revising the general curriculum plan which will be implemented in 1983.

Following is a typical curriculum plan for the R.N. student who passes all proficiency examinations satisfactorily.

Summer Session

NUR 319	Concepts for Nursing Practice.	5
PMC 381	Health Science I	<u>1</u>
		6

Fall Semester

NUR 470	Concepts Basic to Professional Accountability Within the Health Care System	3
NUR 478	Introduction to Public Health Science	2
NUR 489	Community Health Nursing	<u>5</u>
		10

Spring Semester

NUR 479	Leadership and the Nursing Process	5
NUR 480	Experiential Management Seminar	1
	Elective	<u>2-3</u>
		8-9

Commuting and Community Practice.

Students are assigned to other hospitals and health agencies in the Richmond area. Occasionally these assignments may be during evening hours. Public transportation is sometimes available to reach these assignments, but use of an automobile is often necessary, especially in community health nursing. Transportation costs vary widely each semester and may range from very little to more than \$100. Students who anticipate need of financial assistance for transportation costs should apply to the Office of Financial Aid in advance.

Use of Educational Materials. During the program, students have access on a limited basis to certain equipment, such as tape recorders and books not owned by the university library. It is expected that all such materials will be used with care and returned in good condition within the time limit specified. If not, students will be expected to pay the cost of repair or replacement. If such obligations are not met, course grades will be withheld from the student and will not be recorded on the permanent record. Thus, graduation, recommendation to take State Board Examinations, or transfer to another college or university would be impaired by failure to meet these obligations.

ACADEMIC REGULATIONS

Full-time Students. The student is classified as a junior when enrolled in upper division courses. Calculation of the grade-point

¹ These courses may be taken interchangeably in the junior and senior years.

average is based on grades in the School of Nursing.

Progression to the second semester of the program is based on earning at least "C" in Foundations of Nursing Practice and a passing grade in other courses. All courses in the first semester are prerequisite to those of the second semester.

Progression to the third semester is based upon satisfactory completion of the courses of the first year and a cumulative grade-point average of not less than 1.91. Exception to this may be made for the student who has completed only one clinical nursing course in the second semester. If this is the case, the individual will not be able to complete all requirements for graduation by the end of the fourth semester.

Upon request of the student to the Academic Policy Committee, consideration will be given to the individual with a grade-point average between 1.71 and 1.90.

All courses of the first three semesters are prerequisite for the courses of the fourth semester.

Part-time Students. Refer to course descriptions and prerequisites listed with these.

Method of Grading. See information concerning grades in Part I of this bulletin.

The clinical laboratory grading system is satisfactory or unsatisfactory. Unsatisfactory clinical application results in a grade of "F" for the course.

The student may not receive a grade of "I" (Incomplete) in a nursing course if the deficiency is in the clinical laboratory aspect of the course.

Academic Probation. A student is placed on academic probation when either his overall cumulative average falls below 2.0 or a "D" or below is earned in a nursing course. The minimum passing grade for nursing courses is "C."

Removal of Academic Deficits. Nursing courses with a grade of "D" or below may be repeated once upon written approval of the course facilitator and the assistant dean for academic affairs. The student must repeat the course the next time it is offered, unless otherwise recommended (in writing) by the facilitator of the course being repeated and the assistant dean for academic affairs. When a course is repeated and a

grade of "D" or below is earned, the student must withdraw from the school.

A student may not fail more than one clinical course taken sequentially without having to withdraw from the school. A student who fails two clinical courses taken concurrently may repeat these courses the following semester(s).

A student whose grade-point average is less than 2.0 for two consecutive semesters in the curriculum will be referred to the Academic Policy and Progression Committee for review and recommendation for continuance in the school.

Non-nursing courses passed with a "D" grade may not be repeated. The one exception is as follows: the chairman of the department concerned may recommend that a course be repeated if the course is specifically required in the upper division. Otherwise, the student may select an appropriate substitute in a behavioral or natural science with the approval of the course leader and the assistant dean for academic affairs.

Non-nursing courses with a grade of "F" either may be repeated or a comparable course may be taken with the approval of the chairman of the respective department.

Dismissal from a Clinical Course. The faculty/administrators of the School of Nursing are committed to the belief that learning does not take precedence over the physical or emotional welfare of patients and their families. A student who evidences a course of conduct to be clinically unsafe may be dismissed at any time from a clinical nursing course. Unsafe clinical performance is defined as behavior which is actually or potentially dangerous to the patient by virtue of process or outcomes.

Such a compulsory withdrawal does not in itself result in dismissal from the School of Nursing. The student may register for the course the next time it is offered.

A second dismissal from a clinical course requires that the student appear before the Academic Policy and Progression Committee. This committee will make the decision whether the student may enroll in the course for the third time.

Readmission. The student desiring readmission is given equal consideration with other applicants being reviewed at a sched-

uled meeting of the Admissions Committee. The procedures for readmission are as follows:

1. The applicant for readmission must submit a letter to the Admissions Committee requesting review.

2. Prior to acceptance for readmission the applicant is required to be interviewed by the full Admissions Committee or by individual members thereof.

3. The applicant's record from the School of Nursing will be used as one of the criteria for making a decision. The applicant's employment record, educational record, and other experiences subsequent to termination at the School of Nursing will also be considered.

Once the student enrolls in the school, *the degree requirements must be completed within four calendar years*. The credentials and program of a candidate unable to meet this requirement may be evaluated by the Academic Policy and Progression Committee upon request. Such a candidate may have to meet additional requirements established during the interval since matriculation. *This policy does not apply to R.N. students in the evening program.*

Requirements for Graduation. To be a candidate for the degree of Bachelor of Science in nursing, the student must be recommended by the faculty and must

1. Complete all requirements for the prescribed curriculum.

2. Earn a "C" (2.0) in all nursing courses.

3. Earn a cumulative average of "C" (2.0) in all work presented for graduation.

4. Enroll in the School of Nursing for the final two semesters of study.

5. Clear all financial obligations to the university, return all materials to the library, and fulfill any other specifically stated special requirements pertaining to the educational program.

Achievement Tests. During the educational program, students may be required to take various standardized comprehensive achievement examinations in nursing and health sciences.

Class Attendance. Attendance at all classes and laboratories is expected. Absences without valid reason are not condoned; requests for absence on a convenience basis are not granted. For example,

medical and dental appointments, except emergencies, do not constitute basis for an excused absence. Students are allowed to make up course requirements only if the absence is excused. Determination of what constitutes an excused absence will be the responsibility of the course faculty.

Absence from clinical laboratory must be reported to the instructor by the beginning of the laboratory period and to the unit by the beginning of the shift during which the laboratory hours occur.

Any student who attends fewer than 87 percent of laboratory sessions for any course will receive a grade of "F."

In case of extenuating circumstances, exceptions to this policy may be made by group decision of faculty teaching the course.

Separation from the School. A student who wishes to withdraw from the School of Nursing should discuss the plans with the assistant dean for academic affairs, or designee, or the MCV Campus dean of students. Before leaving the school, the proper forms must be obtained from the registrar and completed by the student.

In addition to those standards of conduct described in the *Rules and Procedures of Virginia Commonwealth University* and the *Medical College of Virginia Honor Code*, a student may be suspended or dismissed from the school for failure to meet academic requirements or failure to exhibit the attitudes and skills deemed necessary to function as a professional nurse.

The School of Nursing recognizes its responsibility to the nursing profession and to the consumer of health care. Therefore, any action by a nursing student considered to be unprofessional conduct shall be deemed cause for disciplinary action.

Unprofessional conduct may be defined as, but is not limited to

1. Fraud or deceit in filing application for admission to the school, such as false representation on the application.

2. An act which violates the accepted social norms regarding conduct of one person towards another. Social norms refers to the laws, written or unwritten, which protect the individual and/or his property from *unwanted acts of another*, such as *stealing, lying, cheating, and slander*.

3. Conviction of a felony.

The School of Nursing subscribes to the statements set forth in Section VIII; 8.1, of *The Law, Governing the Examination, Licensure and Practice of Professional Nurses and Practical Nurses*, as issued by the Virginia State Board of Nursing. When applicable, these standards will be used in determining a student's eligibility for continuance in, or readmission to, the nursing major.

Master of Science Degree Program

The School of Nursing offers programs of study leading to the Master of Science degree.

These include major study in community health nursing, maternal and infant nursing, medical-surgical nursing, nursing of children, psychiatric-mental health nursing, gerontological nursing, nursing services administration, and major study with preparation as a nurse practitioner in community health nursing, maternal and infant nursing, and nursing of children. Information regarding admission requirements and procedures and a complete description of the graduate programs offered may be found in the *Virginia Commonwealth University Graduate Bulletin*. Applications may be obtained by writing to the Office of Enrollment Services, Graduate Admissions, Virginia Commonwealth University, 821 West Franklin Street, Richmond, Virginia 23284, or to the Office of the Dean, School of Nursing, Virginia Commonwealth University, Box 567, MCV Station, Richmond, Virginia 23298.

FINANCIAL ASSISTANCE

State Scholarship Fund. Both undergraduate and graduate students may apply for financial assistance from the State Scholarship Fund. Applicants must be residents of Virginia who intend to practice nursing in the state following completion of the educational program. Information may be obtained by writing to the Financial Aid Office, Virginia Commonwealth University, Box 244, MCV Station, Richmond, VA 23290.

FACULTY

Professors: Brownie (Dean); Francis; Munjas; Spaulding

University Professor: Yingling (Dean Emeritus)

Associate Professors: Bach; Bampton; Barrell; Bobbitt; Brocking; Calderon; Clarke; Collins; Crowder; Crummette; Eanes; Exley; Fernandez, F.; Kissinger; Lash; Moore; Noble; Olgas; Tesh; Tyzenhouse.

Assistant Professors: Bell; Cox; Cushnie; Fernandez, T.; Garey; Greishaw; Griffiths; Henry; Hufschmidt; Hughes; Jones; Lacey; Mancini; Mark; Millen; Munton; Rademaker; Stern; Strauss; Swensen; Tauer; Vipperman; Warren.

Instructors: Baum; Burns-Marshall; Corder; Davis, P.; Geldmaker; Gilligan; Goldston; Hatcher; Hutton; Johnson; Mills; Mitchell; Napolitano; Niculescu; O'Meara; Regen; Rivadeneira, W.; Rorabaugh; Rosenthal; Sibley; Stuckey; Turner; Waters; Yow.

Clinical Associates: Banks-Gould; Berry; Boren; Corley; Diehl, L.; Ducey; Harlfinger; Hart; Jones, J.; Leibold; Lindamood; Meeks; Miller, E.; Miller, K.; Ragland; Reid, B.; Ross; Smith, L.; Toney; Wilkin-son.

COURSES OF INSTRUCTION (NUR)

PMC 381 Health Science I. See School of Basic Sciences section.

PMC 382 Health Science II. See School of Basic Sciences section.

MIC 365 Infection and Immunity. See School of Basic Sciences Section.

319 Concepts for Nursing Practice. Summer course; 6 lecture and 12 clinical laboratory hours. 5 credits. A six weeks summer course designed for R.N. students who already have a knowledge base in nursing. The course is intended to refine the student's understanding of the nursing process. Theory encompasses man's adaptation to stress, entry into the health care system, and the further development of a concept of nursing. Students also study the family as a system, communication within the family, major stressors, and theory of groups. Clinical application is provided in a variety of hospital and community settings.

335/435 Health Needs of Women During the Reproductive Years. Semester course; 3 lecture and 9 clinical laboratory hours. 6 credits. Prerequisite or co-requisite: NUR 359, PMC 382. This course is family centered and prepares the student to utilize the nursing process in assisting the woman and her family to healthful adaptation to physiologic and psychologic stresses during the reproductive years.

339/439 Nursing of Adults. Semester course; 4 lecture and 9 clinical laboratory hours. 7 credits. Prerequisite: Nur 359. Prerequisite or co-requisite: PMC 382. Further the student's ability to use the nursing process in the care of hospitalized adults who are threatened with or have pathophysiological and/or psychosocial conditions requiring nursing intervention encompassing preventive, therapeutic, and rehabilitative aspects.

341 Applied Human Nutrition. Semester course; 2 lecture hours. 2 credits. Focuses on the major concepts in human nutrition which will enhance the student's own lifestyle and will enable the student to interpret nutritional components inherent in clinical practice in a variety of settings.

349/449 Psychiatric-Mental Health Nursing. Semester

course; 3 lecture and 9 clinical laboratory hours. 6 credits. Prerequisite: NUR 359. Co-requisite: PMC 382. Students will gain understanding of mental health and mental illness and acquire basic skills to care for mentally ill persons. Course focus is on psychological stress and persons' adaptive responses. With the problem solving approach, students learn interpersonal processes and nursing care planning and interventions along with the meaning of individual, family, and group behaviors. Clinical laboratory experiences are provided in hospitals and other community settings.

359 Foundations for Nursing Practice. Semester course; 5 lecture and 9 clinical laboratory hours. 8 credits. Enables student to see himself as becoming a professional person through the introduction of theory and skills basic to the practice of nursing. Theory emphasizes the nature of man, man's adaptation to stress, man's entry into the health care system, and the development of a general concept of nursing. Includes supervised clinical experiences to assist the student in using theoretical material in the application of the nursing process to the needs of individuals in a variety of settings.

369/469 Nursing of Children. Semester course; 3 lecture and 9 clinical laboratory hours. 6 credits. Prerequisite: NUR 359. Prerequisite or co-requisite: PMC 382. Students use the nursing process in caring for children within a family-centered framework. Content related to both illness and promotion of health is presented within a developmental context and encompasses adaptation along the health-illness continuum including preventive, therapeutic, habilitative and rehabilitative nursing interventions.

372 Theory of Family and Group for Nursing Practice. Semester course; 2 lecture hours. 2 credits. Prerequisite: NUR 359. To assist the student with nursing intervention in families and groups. Emphasis is on the family as a system, communication within the family, major stressors in the family, and the theory of groups. Supervised clinical application is provided in clinical nursing courses.

409. Care of the Critically Ill Adult. Summer course; 2.5 lecture and 12 clinical laboratory hours. 3 credits. Prerequisite: consent. CPR certification desirable. This course is designed to prepare students to utilize the nursing process in caring for the critically ill patient in the intensive care setting.

413. Correlations Between the Basic Sciences and Clinical Experiences. Semester course; 3 lecture hours. 3 credits. Prerequisite: PMC 382. This course is designed to expand the student's knowledge of the basic sciences and to apply them to the patient, disease, and therapy.

470. Concepts Basic to Professional Accountability Within the Health Care System. Semester course; 4 lecture hours. 4 credits. Co-requisite: concurrent enrollment in a clinical nursing course or employment in the health care system. This course is a combination of NUR 471 and 472. Enrollment is limited to R.N. students. Content includes managerial theory, legal and political issues, and introduces the research method and research findings as the basis for accountability in professional and public domains. Application takes place in the concurrent clinical course or work setting.

471 Managerial Theory for Nursing Practice—Health Care Systems and Situations. Semester course; 3 lecture hours. 3 credits. Co-requisite: a clinical nursing course. Designed to enable the student to explore and acquire working knowledge of selected concepts and principles of administration and management within the health care systems and situations. Students utilize theory in case presentations and problem solving. The course establishes a base for assuming leadership roles.

472 Dimensions of Professional Nursing. Semester course; 2 lecture hours. 2 credits. Prerequisite: NUR 471. Co-requisite: a clinical nursing course. A theory course focusing on issues confronting the profession today. A major component of the course is an introduction to nursing research.

478 Introduction to Public Health Science. Semester course; 2 lecture hours. 2 credits. Presents the evolution and principles of modern public health practice and their application to current trends in health care. Content includes demography, epidemiology, community health services, public health care and administration, and international health.

479 Leadership and the Nursing Process. Semester course; 1 lecture and 12 clinical laboratory hours. 5 credits. Prerequisite: all courses of the first three semesters. Provides senior students opportunities for synthesis and knowledge in complex nursing situations. Seminars focus on nursing problems encountered in the care of persons of different ages. The clinical component includes care of individuals as well as groups of patients and the opportunity to practice management skills. Clinical experience in a choice of clinical areas is provided in MCV Hospitals and other area hospitals.

489 Community Health Nursing. Semester course; 1 lecture and 12 clinical laboratory hours. 5 credits. Prerequisite: all 300 level courses. Prerequisite or co-requisite: NUR 471. Emphasizes the application of the nursing process with people in their natural environments under normal or stressful conditions. The student has the opportunity to study health needs of selected families and population groups, and to incorporate the nursing process together with public health concepts and principles of management in nursing in a community.

480 Experiential Management Seminar. Semester course; 1 lecture hour. 1 credit. Co-requisite: NUR 479 or 489. Focus on application of managerial theory to clinical practice experiences in acute and ambulatory care settings. Provides opportunity to develop concept of professional responsibility in the leadership role and to expand communication skills in group situations.

492 Elective Study. Semester course; 1 to 5 credits. Prerequisite: consent. Topics in medical-surgical nursing and maternal-child nursing planned as independent study projects to meet the learning objectives of the student.

GRADUATE COURSES IN NURSING

The descriptions provided here are for the courses in the major in nursing and are restricted to students in this major. Please see

other sections in this bulletin for courses in other departments; viz., genetics, biostatistics, physiology, and other basic sciences.

Courses in related fields and cognate areas which are offered at the Academic Campus are described in the *VCU Graduate Bulletin*. Lecture hours may be used as seminar in which case the hours are doubled.

500 Contemporary Nursing. Semester course; 3 lecture hours. 3 credits. A core course designed to provide knowledge of theories, practices, and procedures common to nursing prior to specialization. Required prior to or concurrently with the first course in the clinical specialty.

501 Introduction to Health Assessment. Semester course; 3 lecture and 4 clinical hours. 4 credits. Prerequisite: BIO 539 or permission of instructor.

531 Maternal-Child Nursing Concepts. Semester course; 2 lecture hours. 2 credits. Prerequisite or co-requisite: NUR 500. In-depth study of key concepts in the childbearing and childrearing years which have implications for nursing action in maternal-child nursing. Emphasis is placed on childbearing and childrearing as a continuum within which health-oriented crisis situations occur in varying frequencies. Appropriate nursing action to assist the family in reestablishing equilibrium will be covered.

570 Methods of Research. Semester course; 3 lecture hours. 3 credits. Focus is on the methods and processes of systematic investigation; critical analysis of studies; and relationships among theory, research, and practice leading to the development of a thesis proposal.

591 Special Topics. Semester course; 1-3 credits. Guided study of specific topics covered briefly in the more general courses.

592 Directed Study in Nursing. Semester course; 1-3 credits. Prerequisite: permission of instructor. Independent study in nursing in a specific area of nursing developed under the supervision of a member of the graduate faculty.

601 Pharmacotherapeutics. Semester course; 1 lecture hour. 1 credit. Prerequisite: BIO 539. Seminar format focuses on the application of basic pharmacotherapeutic principles of drug categories to patient management.

610 Advanced Community Health Nursing. Semester course; 2 lecture and 8 clinical hours. 6 credits. Prerequisite: NUR 500. Advanced concepts and theories basic to the study of individuals and families in the community. Advanced nursing practice examines selected conceptual frameworks for family analysis and nursing intervention.

611 Advanced Community Health Nursing. Semester course; 2 lecture and 8 clinical hours. 6 credits. Theories and concepts basic to health needs of populations and of change strategies related to community organization and action for health.

616 Assessment and Clinical Judgment in Family Nurse Practice I. Semester course; 6 lecture and 8 clinical

hours. 8 credits. Prerequisite: BIO 539. Didactic content taught by a multidisciplinary faculty covers common physical, mental, and developmental problems presented by children and adults in ambulatory settings. Supervised practice includes history and physical examination, screening, and diagnostic procedures and interpretation of selected laboratory findings.

617 Assessment and Clinical Judgment in Family Nurse Practice II. Semester course; 5 lecture and 12 clinical hours. 8 credits. Prerequisite: NUR 616. Continues to increase students' competency in identifying health illness status of children and adults in ambulatory settings. Supervised practice covers increasing responsibility for assessment and clinical judgment.

618 Management of Common Health Problems of Children and Adults in Family Nurse Practice. Semester course; 1 lecture and 20 clinical hours. 6 credits. Prerequisite: NUR 617. Focuses on development of management component of the family nurse practitioner role through working with a physician or family nurse practitioner.

620 Advanced Medical-Surgical Nursing. Semester course; 2 lecture and 8 clinical hours. 6 credits. Prerequisites: NUR 500, BIO 539 or equivalent. In-depth study of adult human responses to acute and chronic illness. Focus is on selected psychosocial concepts and theories, their implication for and application in clinical practice.

621 Advanced Medical-Surgical Nursing. Semester course; 2 lecture and 8 clinical hours. 6 credits. Prerequisites: NUR 500, BIO 539 or equivalent. In-depth study of selected physiological responses of adults with acute and chronic illness. Focus is on implication for and application in clinical practice.

632 Advanced Maternal-Infant Nursing I. Semester course; 1 lecture and 8 clinical hours. 5 credits. Prerequisite: NUR 500, 531. Theory and practice are directed toward the concept that the care of the woman and her family during the reproductive years is a continuous integrated process, centered on the family in interaction with the physical and social environment.

633 Advanced Maternal-Infant Nursing II. Semester course; 1 lecture and 8 clinical hours. 5 credits. Prerequisite: NUR 500, 531. Theory and practice are directed toward study of normal and abnormal physiological and psychosocial patterns associated with the health care of women.

636 Primary Health Care in OB-GYN Nursing. Semester course; 5 lecture and 8 clinical hours. 7 credits. Prerequisites: NUR 632 and BIO 539. Focuses upon identification and management of common physical, mental, social, and developmental problems presented by women in the areas of maternity and gynecologic primary care.

637 Primary Health Care in Nursing Practicum I. Semester course; 1 lecture and 16 clinical hours. 5 credits. Prerequisite: NUR 636. This course is designed to provide the student with intensive clinical experience in the areas of maternity and family planning for clients in primary care.

638 Primary Health Care in Nursing Practicum II.

Semester course; 1 lecture and 16 clinical hours. 5 credits. Prerequisite or concurrent: NUR 636. This course is designed to provide continued intensive clinical experience and an opportunity to integrate the functional role of nurse practitioners with advanced nursing theory.

642 Advanced Nursing of Children I. Semester course; 1 lecture and 8 clinical hours. 5 credits. Prerequisites: NUR 500, 531. An eclectic approach to the nursing care of infants, toddlers, and preschool children. Relationships among family members and with outside support systems are analyzed. Emphasis is placed on attaining and maintaining health and preventing illness.

643 Advanced Nursing of Children II. Semester course; 1 lecture and 8 clinical hours. 5 credits. Prerequisites: NUR 500, 531. An eclectic approach to the nursing care of children and adolescents through the study of the theories related to child development and health care needs.

646 Primary Health Care in Pediatric Nursing. Semester course; 5 lecture and 6 clinical hours. 7 credits. Prerequisites: NUR 501, 531, 601, 642, 643 and BIO 539. Prepares the student to provide primary care for children and families in collaboration with a physician.

647 Primary Health Care in Pediatric Nursing Practicum I. Semester Course; 1 lecture and 16 clinical hours. 5 credits. Prerequisite: NUR 546. Designed to provide intensive clinical experience in the areas of health promotion and maintenance and treatment of the child with acute or chronic illness with preceptor collaboration.

648 Primary Health Care in Pediatric Nursing Practicum II. Semester course; 20 clinical hours. 5 credits. Prerequisite: NUR 546. Designed to provide further intensive clinical experience in the areas of health promotion and maintenance and treatment of the child with acute or chronic illness with preceptor collaboration.

651 Advanced Psychiatric-Mental Health Nursing. Semester course; 2 seminar and 2 clinical hours. 2 credits. Prerequisite or co-requisite: NUR 500. Focuses on individuals and their interactions with selected social systems. Theories related to values, systems, and psychiatric-mental health nursing are examined. Content provides the basis for care of individuals and the use of the nursing process in clinical settings.

652 Advanced Psychiatric-Mental Health Nursing. Semester course; 2 lecture and 8 clinical hours. 6 credits. Prerequisite: NUR 651. A continuation of the study of specific psychiatric nursing concepts. Provides theory dealing with the study of families and family therapy.

653 Advanced Psychiatric-Mental Health Nursing. Semester course; 2 lecture and 8 clinical hours. 6 credits. Prerequisite: NUR 652. Synthesis of psychiatric nursing theory and related areas in the assessment of community dynamics and potentials as they affect the mental health of persons within the community. Focus of the clinical practicum is upon community health care.

680 Individual and Group Behavior in Health Care Organizations. Semester course; 3 lecture hours. 3 credits. Focus is on the behavior of individuals and groups in nursing departments and in health care

organizations. Content includes perception, cognition, motivation, role theory, communication, decision-making, leadership, and conflict management.

681 Macro Organizational Analysis in Nursing. Semester course; 3 lecture hours. 3 credits. Focus is on analysis of macro characteristics of health care organizations and the place of the nursing department within the organization as a whole. Content includes organizational structure, organizational design, technology, organizational culture, organizational environments, and organizational effectiveness.

682 Organizational Development Strategies in Nursing. Semester course; 3 lecture hours. 3 credits. Focus is on planning and managing organizational redesign for the cost-effective delivery of patient care. Content includes organizational assessment and diagnosis, intervention and evaluation strategies, strategies of large system change, and various topics in operational management. There is a practicum requirement of 120 hours associated with this course.

690 Research Seminar in Nursing. Semester course; 1 lecture hour. 1 credit. Prerequisite: NUR 590. Examines practical problems in the implementation of nursing research.

691 Special Topics in Nursing. Semester course; 1-3 credits. Prerequisite: permission of instructor. Focuses upon problems, issues, or practice in nursing. Topics may include historical, contemporary, or emerging phenomena relevant to the growth and development of nursing or its practices.

692 Independent Inquiry in Nursing. Semester course; 1-3 credits. Prerequisite: permission of instructor. Independent study, investigation, or research developed and conducted with guidance by graduate faculty.

693 Teaching Practicum. Semester course; 1 lecture and 8 clinical hours. 5 credits. Prerequisites: six credit hours education courses and 10 credit hours nursing courses. Concentrated study in classroom and clinical teaching content. Supervised practice teaching is provided with undergraduate nursing students under the direction of master teachers.

694 Clinical Specialist Practicum. Semester course; 1 lecture and 8 clinical hours. 5 credits. Prerequisites: methods of research, statistics, 10 credits in nursing courses. Concentrated study and clinical practicum directed toward clinical specialist preparation in the major area of interest.

695 Practicum in Supervision. Semester course; 1 lecture and 8 clinical hours. 5 credits. Prerequisite: third semester standing. Philosophy, purposes, and elements of the social role of the contemporary supervisor as developer of human resources and as a functioning member of organizational structures taught through selected supervised practice.

696 Practicum in Nursing Service Administration. Semester course; 8 clinical hours. 3 credits. Focus is the integration of administrative theory and administrative practice in selected health care settings. Students analyze the reciprocal impact of different clinical interventions, unit social cultures, and administrative decision making on patient care outcomes.

798 Thesis. 6 credits. Required of all students, the master's thesis constitutes carefully planned and executed research under the supervision of an advisor in conjunction with a thesis committee. The student writes and presents the required theses in the area of clinical nursing interest.

Certificate Nurse Practitioner Programs

HISTORY

The family nurse practitioner certificate program began in 1972 and was followed by the obstetric/gynecologic nurse practitioner program in 1975 and the pediatric nurse practitioner program in 1976. All of these programs are conducted as joint endeavors of the Schools of Nursing and Medicine and administered through the School of Nursing.

PURPOSE AND OBJECTIVES

The purpose of the programs is to provide registered nurses with the necessary skills and clinical expertise to provide comprehensive health care to families, women, children in a collaborative relationship with primary care physicians.

The objectives of the programs are to prepare nurses to integrate their nursing skills in direct care, coordination of care, health teaching, and counseling with ability to:

Identify the health status of the individual by taking a health history, performing an appropriate physical examination, and initiating appropriate preventive screening and diagnostic procedures;

Assume responsibility for the management of minor trauma and common health problems of the individual with appropriate intervention;

Assume responsibility for ongoing health maintenance and clinical management of stable, chronically ill individuals;

Identify the need for continuity of care for individuals and families and coordinate the health care needs of patients through appropriate intervention, consultation, and referrals based on data obtained by the nurse practitioner or other members of the health care team;

Provide relevant health instruction, counseling, and guidance to individuals and families;

Relate individual and family health problems to the community and identify emerg-

ing health problems by working with local health organizations and agencies.

ACCREDITATION

All three programs are approved by the joint committee of the Boards of Nursing and Medicine. Graduates are eligible to apply for nurse practitioner certification in Virginia.

ADMISSION REQUIREMENTS

Applicants to the certificate programs must be registered nurses with educational preparation at the diploma, associate, baccalaureate or post-baccalaureate levels; currently licensed to practice in Virginia; completed a minimum of one year of nursing experience in an appropriate area; actively practiced nursing within the past five years.

A personal interview is required. Preference is given to applicants who are from a geographic area in great need of primary health care, have a commitment from a physician to provide a preceptorship or employment, and have primary care nursing experience.

For admission application, write to Coordinator, Nurse Practitioner Programs, Medical College of Virginia, Virginia Commonwealth University, Box 509, MCV Station, Richmond, VA 23298.

FEES AND TUITION

See Part I of this bulletin.

FINANCIAL AID

Information regarding financial aid may be obtained from the Financial Aid Officer, Medical College of Virginia, Virginia Commonwealth University, Box 244, MCV Station, Richmond, VA 23298.

PROGRAM DESIGN

Family Nurse Practitioner Off-Campus Program. This program, 12 months in length, is designed to prepare nondegree-seeking students as family nurse practitioners. The training period encompasses eight months didactic and practice experience and four months of preceptorship in a projected employment situation. The curriculum focuses on providing primary health care to individuals of any age and to

the family as a unit. Emphasis is placed on assisting students with the process of role identity and realignment.

The F.N.P. Program is conducted in Southwest Virginia. Students must be residents of the Southwest Virginia area to be eligible for the program. Students will be required to be on the MCV Campus for the first two months of the program. The remaining 10 months will be conducted in the area of the program site with the students returning to the MCV Campus every six to eight weeks.

The program is a full-time activity. Outside working commitments are not recommended.

Pediatric Nurse Practitioner. The program focuses on providing primary health care services for children and adolescents. It is one academic year in length (nine months). The first five months consist of didactic and clinical instruction while the last four months are a preceptorship in which the student practices under the supervision of a pediatrician in a community setting.

Obstetric-Gynecologic Nurse Practitioner. This is a 12-month program to prepare ob/gyn nurse practitioners to function as primary care providers for women throughout their life cycles. The curriculum expands the nurse's knowledge and skills in assessing, monitoring, maintaining, and promoting the health care of women. Special emphasis is given to maternity care, parenting, newborn assessment, human sexuality, family planning, gynecologic health care, cancer detection, and sexually-transmitted disease control. The program encompasses six months of didactic and clinical practice experience on campus and six months of preceptorship in the community or a projected employment situation.

FACULTY

Nurse Coordinators: Collins, C.O.G.N.P.; Clarke, C.O.G.N.P.

Co-Program Directors, Family Nurse Practitioner Program: Spencer, W., M.D.; Davis, C.F.N.P.

Co-Program Directors, Pediatric Nurse Practitioner Program: Bruch, W., M.D.; Rorabaugh, C.P.N.P

COURSES OF INSTRUCTION (NUP)

400 Clinical Physiology. Semester course; 1 lecture hour. 1 credit. This is a core course designed to strengthen students' concepts of physiology which are

directly applicable in the clinical situation. The course is taught by the use of a self-instructional module and supplemental seminars.

402 Fundamentals of Nurse Practitioner Practice. Semester course; 10 lecture, 1 seminar, and 1 clinical laboratory hour. 12 credits. This is a core course required for FNP, OGNP, and PNP students. Content includes history taking, physical assessment, screening and diagnostic laboratory procedures, and interviewing and counseling techniques. The course also includes core concepts of ob/gyn and pediatrics, beginning concepts of primary health care issues and systems, and role development.

411 Family Nurse Practitioner in Primary Health Care I. Semester course; 5 lecture and one clinical laboratory hour. 6 credits. Prerequisites: NUP 400, 402. This course provides the student with the opportunity to acquire didactic knowledge and selected clinical practice in the delivery of primary health care to adults and children. Didactic content, presented by interdisciplinary faculty, covers physical, mental, and developmental problems presented by adults in ambulatory settings. Family content builds on material presented in NUP 402, and the student begins to work with a family in the field. Supervised clinical practice will provide the student with the opportunity to integrate content gained in NUP 402 with the didactic content in health problems of adults and children by physiological systems.

412 FNP in Primary Health Care II. Semester course; 11 lecture, 2 seminar, and 5 clinical laboratory hours. 18 credits. Prerequisite: NUP 411. Continuation of NUP 411. This course provides in-depth didactic content in common health problems of individuals and families with supervised practice in selected clinical areas, with emphasis on integrating the additional didactic content. There is further family didactic content and practice, building on the family content in NUP 402 and 411 with the student integrating the concepts and techniques in the family experience. The student will have a three week elective clinical experience in an area of choice.

413 FNP Preceptorship. Semester course; 1 seminar and 10 clinical laboratory hours. 11 credits. Prerequisite: NUP 412. This course provides the student with full-time practice with an approved preceptor delivering primary care in a projected employment site and continuing content relative to physical, mental, and developmental problems encountered in the preceptorship. The student develops a small caseload of individuals and families to manage, to assist in developing positive health behavior, to evaluate responses to management plans and to experience the degree of dependency-independency required to carry out the role functions of the FNP. Focus is on development of the management component of the FNP role. Seminars focus on practice-oriented issues and experiences in role development in practice.

434 Obstetric/Gynecologic Nurse Practitioner in Primary Health Care. Semester course; 11 lecture and 4 clinical laboratory hours. 15 credits. Prerequisites: NUP 400, 402. This course provides the student with the opportunity to acquire in-depth didactic knowledge and selected clinical practice in the delivery of primary

health care to women from puberty throughout the life cycle. Theoretical content will focus on the care of women throughout the maternity cycle and on the gynecologic health problems of women. Supervised clinical practice will provide the student with the opportunity to integrate content gained in Fundamentals of Nurse Practitioner practice with in-depth ob/gyn content.

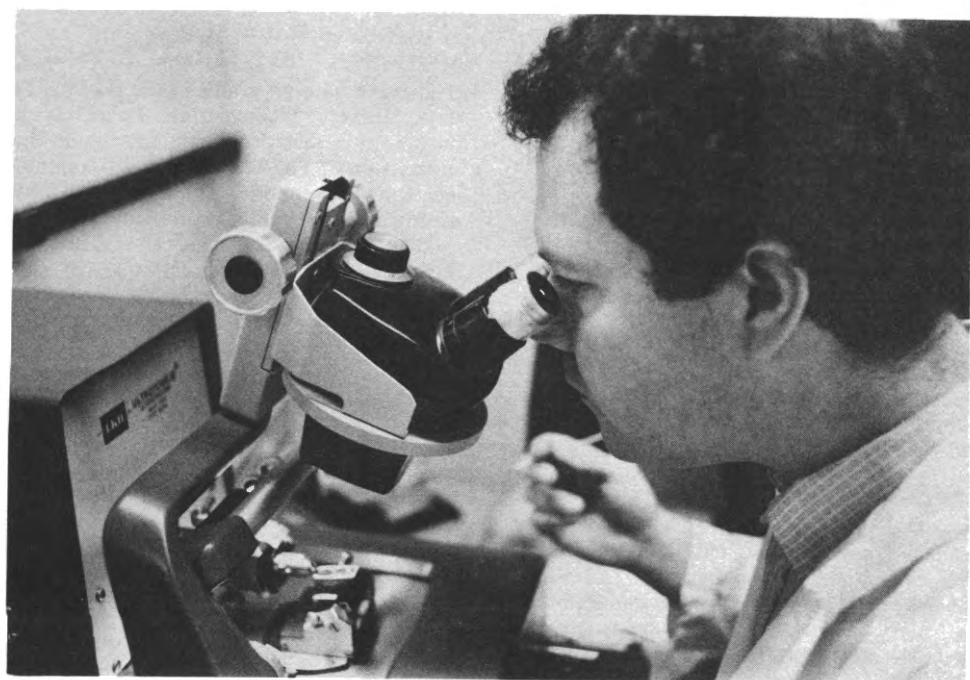
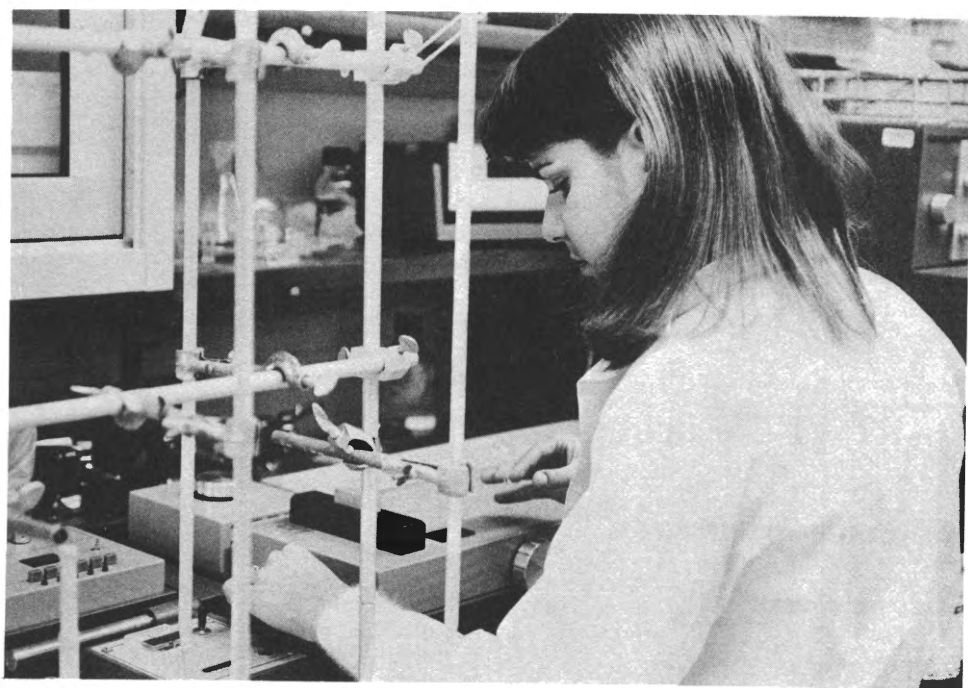
435 OGNP Preceptorship I. Semester course; 1 lecture and 5 clinical laboratory hours. 6 credits. Prerequisite: NUP 434. This course is designed to provide the student with intensive clinical experience in the delivery of maternity, gynecologic, and family planning services for clients in primary care settings. The student will engage in practice with an approved preceptor in a projected employment site.

436 OGNP Preceptorship II. Semester course; 1 lecture and 5 clinical laboratory hours. 6 credits. Prerequisite: NUP 435. This course, which is a continuation of NUP 435, is designed to enable the OGNP to increase expertise in the delivery of primary health care. Emphasis is placed on the integration of didactic knowledge with

clinical practice to develop the role functions of the OGNP.

444 Pediatric Nurse Practitioner in Primary Health Care. Semester course; 6 lecture, 6 seminar, and 12 clinical hours. 12 credits. Prerequisite: NUP 402. This course focuses on common conditions and management problems of children and adolescents. Content is selected epidemiologically. Emphasis is placed on recognition of selected conditions and outpatient management and follow-up. Content will include pertinent historical data for each condition and the use of pharmacological agents used in management; and child growth and development and parenting behaviors.

445 PNP Primary Care Preceptorship. Semester course; 1 lecture and 11 clinical laboratory hours. 12 credits. Prerequisite: NUP 444. A clinical preceptorship provides opportunity for the student to apply knowledge and skills in a particular practice setting under the guidance of a selected preceptor. The preceptor may be a pediatrician or a pediatric nurse practitioner who has been approved by the program and who is thoroughly familiar with the content and objectives of the program.



PART VI— School of Basic Sciences

ADMINISTRATIVE OFFICERS

S. GAYLEN BRADLEY, Ph.D.

Dean

WILLIAM L. DEWEY, Ph.D.

Associate Dean

HISTORY

Basic sciences have historically been an integral part of the curriculum of medicine, dentistry, pharmacy, nursing, and allied health fields. In the earlier years of this university, the basic sciences departments were administered by the School of Medicine with the dean of that school working with committee deans to establish policy for teaching the basic sciences in the several professional schools. In 1966, by the action of the Board of Visitors, a separate School of Basic Sciences and Graduate Studies was established and a dean was appointed as administrative head of the school. In 1974, with the establishment of a university-wide graduate program, it became the School of Basic Sciences. The Ph.D. programs at MCV continue to be administered by the chairman of the MCV Graduate Committee.

PROGRAM

All departments in the School of Basic Sciences provide instruction in their disciplines for students in the other schools on the MCV Campus. By developing large, strong departments with a good balance of faculty, postdoctoral fellows, and graduate

assistants, it is possible to provide quality instruction for all the health profession schools, and to maintain strong research, M.S., and Ph.D. programs, including combined M.S. or Ph.D., M.D. or D.D.S. programs.

PH.D. AND M.S. PROGRAMS IN THE SCHOOLS OF BASIC SCIENCES, MEDICINE, AND PHARMACY

The graduate programs in the Schools of Basic Sciences, Medicine, and Pharmacy at the Medical College of Virginia are under the supervision of The MCV Graduate Committee which is composed of one faculty member from each department offering graduate degrees. The dean of the School of Basic Sciences serves as chairman of this committee, and assumes the administrative responsibilities for admission, curriculum, and awarding of degrees.

The current membership of this committee is Dr. Juan A. Astruc, anatomy; Dr. Joseph P. Liberti, biochemistry; Dr. Sung Choi, biostatistics; Dr. Linden J. Eaves, human genetics; Dr. Joseph V. Formica, microbiology and immunology; Dr. Robert L. Balster, pharmacology and toxicology; Dr. Steven Price, physiology and biophysics; Dr. George W. Gander, pathology; Dr. Marvin Boots, pharmaceutical chemistry; and Dr. John H. Wood, pharmacy and pharmaceuticals.

Committee members are appointed by their respective deans upon the recommendation of the department chairmen. The committee meets monthly, or more often if necessary, and establishes and maintains admission requirements and rules and procedures for awarding the M.S. and Ph.D. degrees. Courses to be offered for graduate credit in these schools must have the approval of this committee, following the rules and guidelines established by the University Graduate Council.

REQUIREMENTS FOR ADMISSION

1. The purpose of admission requirements and procedures is to encourage applications from competent students and to insure selection of those whose motivation, ability, education, and character qualify them to successfully pursue graduate study in preparation for a scientific career.
2. To be considered for admission to graduate programs, all applicants must have earned a baccalaureate or an equivalent degree, prior to admission. Additional entrance requirements for specific programs of graduate study are stipulated by the departments.
3. The following credentials constitute an application and should be sent to the Dean, School of Basic Sciences, Medical College of Virginia, Virginia Commonwealth University, Box 110, MCV Station, Richmond VA 23298.
 - a) Application for admission on a form furnished to the applicant on request. A fee of \$10, in the form of a check or money order (payable to VCU), must accompany the application. The fee cannot be returned nor credited toward tuition payment.
 - b) Official transcripts of all undergraduate and graduate work, sent directly from the college or university registrars to the Office of the Dean, School of Basic Sciences.
 - c) Letters of recommendation from three present or former teachers, or others believed by the applicant to be qualified to evaluate fitness to engage in graduate study for the degree in the field of choice.
 - d) A personal letter from the applicant

summarizing his motivation, education, and aims in pursuing graduate study.

- e) A recent passport size photograph.
- f) Verbal, quantitative, and analytical portions of the Graduate Record Examination are required. Advanced tests (biology, chemistry, physics, or mathematics) are recommended where appropriate. The Medical College Admission Test or Dental Aptitude Test is acceptable in lieu of the Graduate Record Examination for combined degree programs. Scores should be sent to the dean. For information about this examination, contact the Office of Student Services, School of Education, 2087 Oliver Hall, (804) 257-1296 on the Academic Campus; or Educational Testing Service, Box 955, Princeton, NJ 08540.
- g) Foreign applicants who do not use English as their natural language must have a TOEFL score greater than 550—See section on foreign students.
4. Acceptance of an applicant rests with the chairman, MCV Graduate Committee upon recommendation of the major department.

REGISTRATION

While most students register for the first semester beginning in August, arrangements may be made to initiate graduate work at other times during the academic year.

SCHOLARSHIPS, ASSISTANTSHIPS, AND FELLOWSHIPS

Graduate students may apply for a number of state or federal teaching assistantships, scholarships, or fellowships, including the A.D. Williams fellowships. These usually pay \$3,000-5,040, plus tuition and fees on a calendar year basis. The Daniel T. Watts Distinguished Fellowship is awarded to students with exceptional academic credentials. The stipend for these fellowships is \$7,500 per annum. All tuition and fees are also paid.

A brief description of financial aid based on demonstrated need is contained in Part I

of this bulletin. Need-based aid programs include National Direct Student Loan, college work-study, and institutional loans.

THE STUDENTS ADVISORY COMMITTEE

1. Each student shall have an advisor and an advisory committee.
2. Appointment and duties of the advisor:
 - a) An initial advisor will be the director of the graduate program of the student's department, or his designee.
 - b) A permanent advisor shall be appointed by the chairman of the MCV Graduate Committee upon recommendation of the chairman of the student's major department. Appointment should be made no later than the end of the second semester after acceptance. A change in advisor may be made by the chairman of the MCV Graduate Committee upon recommendation of the chairman of the major department.
 - c) The advisor shall be chairman of the student's advisory committee which should be appointed six months prior to the comprehensive examinations.
 - d) The advisor shall, with the student's advisory committee, have responsibility for the total guidance of the student, subject to the approval of the chairman of the major department and the chairman of the MCV Graduate Committee.
 - e) The advisor shall work out a plan of study with the student.
 - f) The advisor shall supervise the student's research work and thesis preparation and shall be one of the examiners of the thesis.
 - g) At the close of each academic year, the advisor shall submit to the Office of the School of Basic Sciences, a statement covering the progress of the student and recommendations whether or not his/her graduate studies shall be continued.
3. Appointment and duties of the student's advisory committee:
 - a) The student's advisory committee shall be appointed six months prior to the comprehensive examinations upon recommendation of the student's advisor and after recommendation by the chairman of the major department. The composition of the advisory committee shall be such that all significant areas of the student's course work are represented. For the purpose of examinations and thesis evaluation, and because of special knowledge and distinction in the field of the candidate's work, an additional member, who may be from a different institution, may be appointed to the student's advisory committee by the chairman of the MCV Graduate Committee. Changes in the membership of the Committee are made in the same way.
 - (i) The committee for the Ph.D. candidate shall consist of a minimum of five members as follows: the student's advisor; two other members of the graduate faculty of the department in which major work is to be taken; and at least two representatives of the graduate faculty outside the major department, from two different departments where feasible.
 - (ii) The committee for the M.S. candidate shall consist of a minimum of three members as follows: the student's advisor; one other member of the graduate faculty of the department in which major work is to be taken; and one representative of the faculty outside the major department.
 - b) The student's advisory committee shall work with the student's advisor in guiding the student's graduate program.
 - c) The student's advisory committee shall recommend and approve a degree program (including foreign language if applicable) for the student as soon as practical. The proposed M.S. program should be filed with the dean's office prior to the comprehensive examinations; for

the Ph.D. degree, no later than the end of the third semester of study. In approving a foreign language, the student's advisory committee is guided by the importance of the language in the scientific literature of the student's major subject.

- d) The student's advisory committee shall conduct his oral comprehensive and final examinations.

GENERAL REQUIREMENTS FOR GRADUATE DEGREES

1. All full-time graduate students are expected to register for a minimum of 15 semester hour credits per semester and six semester hours during the summer. This requirement includes research. As an example, when a student is registered for ten credits in formal courses, he is expected to undertake five credits of research under his advisor or other approved faculty member.
2. Grades are assigned with these values: A—excellent, indicating unusual achievements; B—clearly satisfactory; C—passing; D—unsatisfactory for graduate credit; F—failure. The grade-point value of the grades shall be 4,3,2,1, and 0 for A,B,C,D and F, respectively. No student may take the comprehensive examination for the Ph.D. degree or the final oral examination for the M.S. degree if his overall grade-point average is less than 2.5 or if his grade-point average for courses within his major department is below 3.0. Research credits shall not be counted in computing this average, and shall be graded as P—pass satisfactory, or F—fail. Other grade interpretations are described in Part I of this bulletin.
3. All cases of unsatisfactory student performance, including any grade of D or F, failure to pass written or oral comprehensive examinations, or thesis or final examinations require action of the MCV Graduate Committee to permit the student to continue.
4. Proficiency in a foreign language is not a degree requirement. However, in some graduate programs, due to the nature of the discipline, the demonstration of proficiency in a foreign

language can be required by the student's advisory committee as stipulated by the department. When a foreign language is required, each foreign language examination shall be given by an examiner approved by the chairman of the MCV Graduate Committee. The dean may elect to accept, as evidence of satisfactory foreign language knowledge, a comparable examination at another graduate school.

5. Five or more copies of the thesis (as required), prepared according to standards approved by the MCV Graduate Committee, shall be sent to the student's advisory committee in final form three weeks or more before the date of graduation. (Graduation dates are in May, August, and December.) These copies are to be submitted in temporary binders. Following acceptance of the thesis and passing the final examination, it shall be the responsibility of the candidate to present to the dean's office the original plus four copies of the thesis suitable for binding, along with a check to cover the cost of handling.
6. The dean will recommend the granting of a degree, only after all requirements have been fulfilled, including payment of all fees to the university, and after submission of the copies of the thesis for binding. Degrees are not granted *in absentia* unless specific written request is made to the dean and permission is granted.

MASTER OF SCIENCE

1. Advanced graduate study leading to the Master of Science degree is offered in the Departments of Anatomy, Biochemistry, Biostatistics, Human Genetics, Microbiology and Immunology, Pathology, Pharmacology and Toxicology, Pharmacy and Pharmaceuticals, Pharmaceutical Chemistry, and Physiology and Biophysics.
2. A minimum of 24 semester hours is required, exclusive of research credits. In practice, it is found that two years of study usually are necessary to complete the requirements. A time limit of five calendar years, beginning at the time of

first registration, is placed on work to be credited toward the Master of Science degree. As many as 12 semester hours credit may be given for work previously completed, upon recommendation of the student's advisory committee with concurrence by the chairman of the MCV Graduate Committee.

3. Each department, at its own discretion, may stipulate one foreign language requirement for the master's degree. It is strongly recommended that the student satisfy the foreign language requirement as soon as possible after beginning his program. The student must do so at least two months before submission of the thesis.
4. Each student conducts a research study under the guidance of his/her advisor. This study is reported in a thesis, prepared in acceptable form and style. On approval of the thesis by the advisor, the student submits a copy to each member of the advisory committee.
5. The thesis is examined by the student's advisory committee members, who shall decide upon its acceptability. The committee members may confer with one another before making their decision. Each committee member shall report to the chairman of the MCV Graduate Committee through the student's advisor when the thesis is acceptable for defense. The thesis is approved only if accepted unanimously.
6. Upon approval of the thesis, the student appears for a final oral examination administered by the student's advisory committee. The chairman of the MCV Graduate Committee, or an appointee, serves as chairman of the examination committee. Final examination shall be open to the faculty; time and place (together with the candidate's name, department, and title of thesis) shall be announced at least seven days in advance.
7. The final examination of an M.S. candidate includes the subject matter of course work as well as the thesis. A favorable vote, with no more than one negative vote, is required for the can-

didate to pass the examination. Only members of the student's advisory committee and the examiner appointed by the chairman of the MCV Graduate Committee shall vote. The chairman of the MCV Graduate Committee, or a faculty representative, will attend all oral examinations and will cast a vote. No examiner may abstain from voting.

8. The candidate, having fulfilled all the requirements for the degree of Master of Science, is recommended by the dean to the president for the degree.

DOCTOR OF PHILOSOPHY

1. Advanced graduate study leading to the Doctor of Philosophy degree is offered in the Departments of Anatomy, Biochemistry, Biostatistics, Genetics, Microbiology and Immunology, Pathology, Pharmaceutical Chemistry, Pharmacy and Pharmaceutics, Pharmacology and Toxicology, and Physiology and Biophysics.
2. At least two years in residence are required for entering students holding the M.S., M.D., or D.D.S. degrees and at least three years for those entering with the baccalaureate degree only. A time limit of seven calendar years, beginning at the time of first registration, is placed on work to be credited towards the Doctor of Philosophy degree.
3. A student becomes an applicant for the doctorate when admitted as such to graduate studies. No assurance is given that the student will become a candidate for the Ph.D. degree until the student has given evidence of superior scholarship.

Admission to Candidacy

Before admission to candidacy for the doctorate, the student must have satisfied the (1) language requirements, if applicable, (2) completed required course work, (3) successfully completed the comprehensive examinations, and (4) fulfilled any additional departmental requirement. Students are admitted to candidacy by the chairman of the MCV Graduate Committee upon recommendation of advisors and advisory committees, with the approval of the major department.

Comprehensive Examinations

1. Upon satisfactory completion of all required, formal course work and successfully passing foreign language examination(s) (if required), the student takes written and oral comprehensive examinations. The written examination is administered by faculty of the student's major department. The student's advisory committee may require a minor field of study, in which case the student will also take a written comprehensive examination given by that department. In the event of failure in the written comprehensive examination in the major or minor department, the student, with the approval of the MCV Graduate Committee, may be permitted to repeat the written examination in the department in which the failure occurred.
2. After successfully passing the written examination(s), the student will take the oral portion within one month. This examination is conducted by the student's advisory committee. A favorable vote of the advisory committee with no more than one negative vote (all members being required to vote) shall be required to pass the oral portion of the comprehensive examination. The chairman of the MCV Graduate Committee or a faculty member representing him/her will chair the oral examinations and will cast a vote.
3. If a student passes the written comprehensive examination, but fails the oral part, the student may be re-examined only in the oral part with the approval of the MCV Graduate Committee.
4. The oral comprehensive examination is open to all members of the faculty. Faculty members in attendance may ask questions of the candidate, but their questions shall not be presented until after the advisory committee has completed its questions. Faculty members other than those on the advisory committee shall not vote on the success or failure of the candidate. The time and place of the examinations shall be posted at least seven days in advance.

5. The examination must be completed successfully at least six months before submission of the dissertation.

Dissertation Research

1. The student must conduct a substantial original investigation under the supervision of his/her advisor and prepare a dissertation reporting the results of this research and analyzing its significance in relation to existing scientific knowledge.
2. When the dissertation has been completed, five copies, or more as required, in acceptable form and style are submitted to the members of the advisory committee. The committee members decide upon the acceptability of the candidate's thesis. A favorable unanimous vote is required to approve the dissertation and all examiners are required to vote.
3. If the advisory committee accepts the dissertation for defense, the candidate appears before them for a final oral examination. The chairman of the MCV Graduate Committee, or his representative, shall serve as chairman of the committee. This examination is open to all members of the faculty. The final oral examination will be limited to the subject of the candidate's dissertation and related matters. A favorable vote of the candidate's advisory committee, and no more than one negative vote, shall be required for passing the final oral examination. All committee members and the chairman of the MCV Graduate Committee or a representative must vote. There shall be announcements of the candidate's name, department, and title of dissertation, together with the day, place, and hour of the final oral examination at least seven days in advance.
4. The candidate, having fulfilled all of the requirements for the degree of Doctor of Philosophy, is recommended by the dean to the president for the degree.

SPECIAL STUDENTS

Upon recommendation of the department, the chairman of the MCV Graduate Com-

mittee may admit for individual courses students who are not candidates for a degree. Students must obtain permission from the instructor before being allowed to register. Special students employed full-time will be limited to one course per semester, usually about three or four semester hours credit.

SUMMER REGISTRATION

Graduate students are expected to devote ten or more weeks during the summer to full-time research. Students registered for research credit are billed at the established tuition rate.

TRAINING AS A TEACHER

Currently there is increased emphasis on competence as a teacher as well as an investigator for faculty members of colleges, universities, and professional schools. In addition to practical experience, laboratory teaching, and lecturing, students should give consideration to courses offered by VCU School of Education concerning learning theory, instructional strategy, and educational technology in adult education.

A complete listing of courses in education available in the university may be found in the *VCU Graduate Bulletin* or obtained from the School of Education, Office of Graduate Studies, 1015 West Main Street, Richmond, VA 23284, (804) 257-1296.

COMBINED M.S./PH.D. AND M.D. OR D.D.S. DEGREE PROGRAMS

Many future physicians and dentists, especially those interested in academic and research careers, need to start in-depth training in research while still in school or in residency training. This need can be effectively met by completing the requirements for the M.S. or Ph.D. degree concurrently with the study of medicine or dentistry. The MCV/VCU medical and dental curricula, with free time for elective courses and research, provide an excellent opportunity for interested students to enter a combined M.S./M.D. or /D.D.S. or Ph.D./M.D. or /D.D.S. program.

Admission of medical and dental students regularly enrolled in these schools, to this combined degree program is processed

through the office of the dean of the School of Basic Sciences by established procedures. Applicants must have approval of their professional school deans.

The Medical College Admission Test or Dental Aptitude Test is accepted in lieu of the Graduate Record Examination. Undergraduate transcripts and references are obtained from the professional school. No application fee is required since the student is already regularly enrolled in a school of the university.

The requirements for a combined professional school/graduate school degree in basic sciences are equivalent to those required of students seeking a graduate degree alone and are determined by the individual department. One of the advisory committee members is the student's professional school advisor.

The minimum graduate residence requirement is one year for the M.S. and two years for the Ph.D. degree. Twenty-four weeks of graduate work (two summers) will be considered equivalent to one year of residence. A time limit of five calendar years for the M.S. and seven calendar years for the Ph.D. degree, beginning at the time of first registration in the graduate school, applies to work to be credited toward degrees for students in combined programs.

DEPARTMENTAL RESEARCH INTERESTS

The graduate course offerings and the list of graduate faculty for each department offering graduate work under the administration of the chairman of the MCV Graduate Committee are given in the appropriate school sections of this bulletin. The pages on which these may be found and brief statements of the research interests of the faculties of the departments follow:

School of Basic Sciences

- 1. Department of Anatomy page 104
- Research Interests: ultrastructural studies of ovary, uterus, and placenta; maternal accommodations to implantation; experimental embryology; teratological aspects of drug metabolism; control of corpus luteal life span; comparative neuroanatomy and CNS connectivity; neuroendocrinology; anatomical substratum of analgesia; structural and functional studies of the cerebral vasculature and CNS trauma; neuroanatomy and neurophysiology of eye movement; eye differentia-

tion; synaptology; maturation in central nervous system; renal transplantation rejection; ontogeny of the immune system; immunohematology; immune dysfunction and malignancy; and carcinogenesis.

2. Department of Biochemistry page 104

Research Interests: enzyme chemistry; cellular control mechanisms; protein structure and function; macromolecular structure; genetic control of development and differentiation; nuclear proteins; mechanism of hormone action; neurochemistry; intracellular protein catabolism; protein and nucleic acid metabolism; steroid and phospholipid function; spectroscopy; X-ray crystallography; and other aspects of physical biochemistry.

3. Department of Biostatistics page 105

Research Interests: response surface applications to cancer treatment; correlation analysis and sequential analysis; multivariate analysis; statistical analysis of toxicology studies; multidimensional scaling; linear models; statistical analysis of clinical trials; epidemiological and demographic research; applications of Bayesian statistics to the medical sciences; time series analysis and automatic classification of evoked potentials elicited from severe head trauma patients.

4. Department of Human Genetics page 106

Research Interests: human cytogenetics and somatic cell genetics; biochemical and molecular genetics; human population, quantitative and behavior genetics; clinical genetics including studies of counseling, twins, metabolic and neurosensory disorders.

5. Department of Microbiology and

Immunology page 107

Research Interests: microbial biochemistry, ecology, genetics and physiology; molecular biology; biophysical characterization of biological macromolecules; genetic mechanisms and regulation of prokaryotic and eukaryotic cells; membrane transport; cellular differentiation; X-ray crystallography; immunobiology; immunotoxicology; immunopotentialization; host-parasite interactions; animal virology; mycology; medical bacteriology; cellular oncology; cellular and tumor immunology; cancer chemotherapy; antibiotics and chemotherapy.

6. Department of Pharmacology and

Toxicology page 108

Research Interests: Drug metabolism; pharmacodynamics; psychopharmacology; cardiovascular pharmacology; clinical pharmacology; toxicology; drug evaluation; and biochemical and central nervous system pharmacology.

7. Department of Physiology and Biophysics. page 110

Research Interests: Motor and sensory systems; behavior; endocrine regulation of reproduction and thyroid systems; gastrointestinal secretory systems; oxygen transport and delivery systems; topics in general physiology including mechanisms of solute transport in epithelial and synthetic membrane systems; and excitation-contraction coupling in cardiac, skeletal, and smooth muscle; effects of ionizing and nonionizing radiation on the eye and other organs; photobiology.

School of Medicine

Department of Pathology page 43

Research Interests: biochemical and clinical applications of enzyme and protein immobilization, clinical enzymology, techniques in clinical chemistry, membranes in the pathogenesis of muscular dystrophy, mechanism of complement activation, oral carcinogenesis, mycoplasma-bacterial interactions, bacterial L-forms, immunohematology, immunotherapy of cancer, cerebral microcirculation, blood substitutes, leukemia, sickle cell disease, trace metal metabolism in tumors, drug distribution, diagnostic immunoassays, inflammation, fever, neuro-chemistry and ultrastructure of brain, infectious diseases, paleopathology, and diagnostic virology.

School of Pharmacy

1. Department of Pharmaceutical Chemistry... page 73

Research Interests: synthesis and biological evaluation of new compounds, determination of relationships between chemical structure and biological activity, studies on modes of drug action, theoretical studies on structure-activity relationships of drugs including the use of molecular orbital theory and molecular connectivity, rational design of new drugs, studies on drug metabolism. Drug classes under investigation include antineoplastics, hypocholesteremics, hypoglycemics, hypotensives, neurotransmitters, antagonists, peptide antibiotics, psychotropic agents, and urolithiasis inhibitors.

2. Department of Pharmacy and

Pharmaceutics page 74

Research Interests: bioavailability studies, factors governing release of drugs from solid dosage forms, micellar nature of drug solutions, drug-protein binding interactions, effects of saturated and competitive metabolism on pharmacokinetics, clinical pharmacokinetics in man and use of individual pharmacokinetic parameters in optimizing dosage regimens, development of analytical methodology for drugs in biological fluids, isolation of new drugs from natural sources, design and management of pharmacy-related health service systems, and drug prescribing and utilization studies.

INTEGRATED CURRICULUM— SCHOOL OF MEDICINE

All basic sciences departments are involved in teaching the integrated curriculum in the School of Medicine. Lectures, conferences, and laboratories are offered during the M-I year, principally by the Departments of Anatomy, Biochemistry, Biostatistics, Genetics, and Physiology. Microbiology and Pharmacology are taught mainly in the M-II year. In addition, the basic sciences departments offer electives which are available to medical students throughout their curriculum but primarily in the fourth year.

INTERDEPARTMENTAL BASIC SCIENCES COURSES

Certain courses are taught by two or more departments.

BIC 550—MIC 551. Basic Science Core Curriculum for Postgraduate Dental Students. Continuous course; 3 lecture hours. 3 credits. This course is designed to provide the postgraduate dental student with the educational experience in the basic science required for the successful completion of his/her specialty training program. Selected lectures in the basic science areas related to dentistry are presented and are supplemented by assigned articles.

COURSES OF INSTRUCTION Department of Anatomy (ANA)

Professors: Jollie (Chairman); Astruc; Harris; Johnson; Povlishock; Seibel

Associate Professors: Geeraets, (Ophthalmology); Goldberg; Haar; Krieg; Leichnetz; Owers; Quattropani; Sholley; Spencer; Szakal

Assistant Professors: Craig; East; Jackson; McClung; Merchant; Mong

302 General and Oral Histology (Dental Hygiene). Semester course; 3 lecture hours. 3 credits. A lecture course in the microscopic anatomy of general body tissues and of the oral cavity. With ANA 502 for two months.

303 Head and Neck Anatomy (Dental Hygiene). Semester course; 3 lecture and 1 laboratory hour. 3.5 credits. An overview of head and neck anatomy with emphasis on oral structures. Lectures and laboratory with ANA 501 for one month.

401 Principles of Human Anatomy (Primarily for pharmacy students). Semester course; 3 lecture and 3 laboratory hours. 4.5 credits. The structure of the human body is surveyed by organ systems which are studied at several levels of organization. Emphasis is placed on basic concepts and their application to various body components.

403 Embryology (Physical Therapy). Semester course; 1 lecture hour. 1 credit. A study of the development of the form of the human body emphasizing structural and developmental relationships between the musculoskeletal and nervous systems.

405 General and Oral Microanatomy and Embryology (Dental Hygiene). Semester course; 3 lecture hours. 3 credits. A study of the normal tissues and organs of the human body at the microscope level, with emphasis on the histological organization and development of the oral cavity.

501 Gross Anatomy (Dentistry). Semester course; 4.5 lecture and 8 laboratory hours. 8.5 credits. A systematic dissection and study of the human body with clinical correlation and emphasis on the head and neck.

502 Microscopic Anatomy (Dentistry). Semester course; 3 lecture and 6 laboratory hours. 6 credits. A study of the normal tissues and organs of the human body at the

microscope level, with emphasis on the histological organization and development of the oral cavity.

503 Neuroanatomy (Dentistry). Semester course; 1.5 lecture hours. 1.5 credits. This course provides the student with a wide exposure to the field of neuroanatomy. The structure and connections of the brain and spinal cord are stressed so that the student is prepared to deal with physiological, pharmacological, and clinical aspects presented in other courses.

609 Developmental and Gross Anatomy. Semester course; 3 lecture and 18 laboratory hours. 12 credits. A graduate level, in-depth study of human anatomy at the gross level. Although intended primarily for graduate students in anatomy, this course will prove useful for all graduate students desiring a thorough knowledge of human gross anatomy.

610 Neuroanatomy. Semester course; 4 lecture and 4 laboratory hours. 6 credits. An in-depth study of the structure, connections, and function of the central nervous system. The laboratory sessions complement lecture presentations through the use of actual gross brain and histological materials and expose the student to current neuroscience literature.

613 Advanced Studies in Anatomy. Semester course; 3 lecture and 6 laboratory hours. 6 credits. An in-depth course in specific areas of anatomy: histology, gross anatomy, and neuroanatomy.

614 Microscopic Anatomy. Semester course; 3 lecture and 6 laboratory hours. 6 credits. A graduate level, in-depth study of human anatomy at microscopic and fine structural levels.

616 Techniques in Electron Microscopy. Semester course; 2 lecture and 6 laboratory hours. 5 credits. Prerequisite: ANA 501. Students are taught the basic techniques and theories of ultramicrotomy and electron micrography, as well as the use of the electron microscope.

690 Anatomy Seminar. Semester course; 1 lecture hour. 1 credit. This course is a joint effort by the faculty and graduate students of the Department of Anatomy. Reviews and reports of original research and significant advances in the basic medical sciences are submitted.

697 Research in Anatomy. 1-15 credits.

Department of Biochemistry (BIC)

Professors: Martinez-Carrion (Chairman); Banks; Collins; Higgins; Liberti; Rogers; Scott (Hematology)¹

Associate Professors: Bond; Brandt; Diegelmann; DeVries; Franson (Biophysics); Guzelian (Medicine); Kline; Schirch; Shelton; Van Tuyle
Assistant Professors: Chlebowski; Evans; Grogan; Peterson; Shaw; Wright; Zendra
Research Instructor: Bartolf

402 Biochemistry (Pharmacy). Semester course; 4 lecture and 3 laboratory hours. 5.5 credits. Prerequisite:

¹Department in parentheses indicates joint appointment.

CHE 301-302 or equivalent. A presentation of structural biochemistry, intermediary metabolism, physiological chemistry, and nutrition as a part of the fundamental background of modern pharmacy.

404 Biochemistry (Undergraduate). Semester course; 3 lecture hours. 3 credits. Prerequisites: CHE 301-302 or equivalents and permission of instructor. A presentation of structural biochemistry, intermediary metabolism, and nutrition. Undergraduate students desiring biochemistry laboratory with lectures should enroll in BIC 402.

501 Biochemistry (Dentistry). Semester course; 4 lecture and 3 laboratory hours. 5.5 credits. Prerequisite: organic chemistry, three credits of physical chemistry, or permission of instructor. A presentation of structural biochemistry, intermediary metabolism, physiological chemistry, and nutrition as part of the fundamental background of modern dentistry.

503-504 General Biochemistry. Continuous course; 3 lecture hours. 3 credits. Prerequisite: eight credits of organic chemistry. Both semesters are required for the comprehensive introductory course for graduate students. BIC 503 is prerequisite for BIC 504.

505-506 Experimental Biochemistry. Continuous course; 4 laboratory hours. 2 credits. Prerequisite: BIC 503 (or concurrent) or equivalent, quantitative chemistry. Laboratory work, including theory and practice of advanced biochemical research methods.

601 Lipids. Semester course; 3 lecture hours. 3 credits. Alt. yrs. '83-'84.) Prerequisite: BIC 503-504. Chemical basis of lipid structure determination and analysis. Treatment of methods for the analysis of lipid structures, micelles, membranes, and lipoproteins. Selected topics of lipid metabolism.

602 Physical Properties of Macromolecules. Semester course; 3 lecture hours. 3 credits. Prerequisite: BIC 503-504 and physical chemistry. Physico-chemical approaches to the determination of the structure and conformation of macromolecules.

603 Nutritional Biochemistry. Semester course; 3 lecture hours. 3 credits. (Alt. yrs. '84-'85.) Prerequisite: permission of instructor. Study of chemistry and mechanisms of vitamins and functions of essential elements. Experimental and practical aspects of nutrition.

604 Enzymology. Semester course; 3 lecture hours. 3 credits. Prerequisite: BIC 503-504. Physical and chemical properties and mechanisms of action of enzymes. Treatment of chemical catalysis, enzyme kinetics, and correlation of enzyme structure to mechanisms.

605 Molecular Biology. Semester course; 4 lecture hours. 4 credits. Prerequisite: undergraduate biology and/or chemistry. Chemistry of nucleic acids; protein synthesis; molecular genetics and control; membrane biophysics; molecular basis of disease.

606 Biochemical Control Processes. Semester course; 3 lecture hours. 3 credits. (Alt. years '84-'85.) Prerequisite: BIC 503-504 and permission of instructor. An advanced course on aspects of control mechanisms at the molecular level.

610 Current Trends in Biochemistry. Semester course; 2 lecture hours. 2 credits. Prerequisite: BIC 503-504. A study and literature review of common and complex biochemical substances using recent research methodology.

690 Biochemistry Seminar. Semester course; 1 credit. Reports on recent biochemical literature and research by students and staff.

697 Research in Biochemistry. 1-15 credits. Research leading to the M.S. or Ph.D. degree and elective research projects for students in the professional schools.

Department of Biostatistics (BIS)

Professors: Kilpatrick (Chairman); Carter; Choi; Minton (Institute of Statistics)¹

Adjunct Associate Professor: Flora

Assistant Professors: Chinchilli; Hamer (Psychiatry)

Instructors: Boyle; Campbell

511, 512 Methods of Biostatistical Analysis. Semester course; 3 lecture hours. 3, 3 credits. (This is a two-semester sequence. However, BIS 511 may be taken without taking BIS 512.) Basic concepts of statistical measures, variation, distributions, tests of significance, simple nonparametric tests, analysis of variance, concepts of experimental design, regression, correlation; analysis and design of factorial experiments, Latin squares, and others; effects of blocking fractional replication, and confounding.

515 Biostatistical Data Management. Semester course; 1 lecture hour. 1 credit. Concepts of data management are dealt with. Methods of data collection, editing, and validation are reviewed. Importance of data file arrangement and maintenance is addressed. Research protocols are critically reviewed.

516 Biostatistical Consulting. Semester course; 1 lecture hour. 1 credit. The principles dealing with the basic art and concepts of consulting in biostatistics. The non-statistical course discusses role, responsibilities of biostatisticians, relationship between clients and consultants, method of writing reports, etc.

521 Biostatistical Principles of Health Care Information. Semester course; 3 lecture hours. 3 credits. (For graduate students in nursing and physical therapy; others with consent.) A basic introduction to the nature, use, and analysis of hospital and health-care statistics. The collection, presentation, tabulation, and interpretation of statistical data. Classification of measurements and observations, properties of rates, ratios, and indices. Some typical statistical distributions. The use of measure of location and dispersion to describe a distribution. 'Normal' variation and outliers. The elementary laws of probability. The concept of a sampling distribution, the standard error of the mean and confidence limits in large and small samples, and tests of significance.

524 Biostatistical Computing. Semester course; 3 lecture hours. 3 credits. Prerequisite: BIS 511, 521, or equivalent.

¹Department in parentheses indicates joint appointment.

lent. The Statistical Analysis System (SAS) is both a powerful computer language and a large collection of statistical procedures. Students will learn how to create and manage computer data files. Techniques for thorough examination and validation of research data will be presented as the initial step of a complete, computerized analysis. Descriptive statistics will be computed and statistical procedures such as t-tests, contingency tables, correlation, regression, and analysis of variance then applied to the data. Special attention will be paid to the applicability of each procedure. Students will be encouraged to analyze their own or typical data from their disciplines.

530 Elements of Biometry. Semester course; 5 lecture hours weekly during July. 2 credits. (For dental and medical fellows; graduate students with consent.) Concepts of biostatistics and epidemiology. Summary statistics and tables. Normal distribution and statistical association. Chi-square tests, t-tests, Wilcoxon test, and other tests. Sensitivity, specificity, odds ratios, and related topics. Clinical trials, prospective and retrospective studies, and other miscellaneous topics in biostatistics and epidemiology.

537 Sampling. Semester course; 3 lecture hours. 3 credits. (Alt. yrs. '84-'85.) An introduction to the theory and methods of sampling and sample surveys including random, stratified, systematic, and probability sampling, estimation of sample sizes, ratio and regression estimates, and analytical surveys.

538 Epidemiology and Population Research. Semester course; 3 lecture hours. 3 credits. (Alt. yrs. '83-'84.) Sources of vital statistical data—review of the binomial, Poisson, negative binomial distributions as they apply to vital events; summary statistics, rates, ratios, and others; direct and indirect standardization; abridged life tables; principles of epidemiology; interpretation of analytical surveys; problems in the analysis of observational studies in health care and public health; casualty; inferences; path analysis; modeling; and crucial observations.

541-542 Theory of Probability and Biostatistical Inference. Semester course; 3 lecture hours. 3, 3 credits. (This is a two-semester sequence. However, BIS 541 may be taken without taking BIS 542.) Discrete and continuous probability distributions, moment generating functions and change of variables; limit theorems and laws of large numbers; Bayesian, maximum likelihood, and estimators; Neyman-Pearson and likelihood ratio criteria for testing simple and composite hypotheses.

546 Linear Biostatistical Models. Semester course; 3 lecture hours. 3 credits. Prerequisite: STA 513. Distribution of quadratic forms under normal theory; general linear model of full rank and less than full rank, Gauss-Markov theorem; estimability.

547 Nonparametric Statistics. Semester course; 3 lecture hours. 3 credits. (Alt. yrs. '83-'84.) Theory of distribution-free and order statistics with emphasis on estimation and hypothesis testing.

641 Advanced Biostatistical Inference. Semester course; 3 lecture hours. 3 credits. (Alt. yrs. '84-'85.) Prerequisite: STA 514. Concepts of classical decision theory,

the Bayesian approach to decision theory, the use of prior information in arriving at decision procedures, empirical Bayesian tests of hypotheses, estimation of parameters, and other applications. In the second half of this course, the theories of estimation and hypothesis testing introduced in STA 514 will be extended.

642 Methods of Multivariate Analysis. Semester course; 3 lecture hours. 3 credits. (Alt. yrs. '83-'84.) Prerequisite: BIS 511, 546. Introduction to the theory and methods of analysis of multivariate data; generalization of standard univariate techniques to the multivariate, unionintersection, and likelihood ratio tests; multiple partial, and canonical correlation; principle component analysis; discriminant analysis.

650 Design and Analysis of Response Surface Experiments. Semester course; 3 lecture hours. 3 credits. (Alt. yrs. '83-'84.) Prerequisite: BIS 511 and 546. Philosophy, terminology, and nomenclature for response surface methodology, analysis in the vicinity of the stationary point, canonical analyses, description of the response surfaces, rotatability, uniform information designs, central composite in design, and modern design criteria.

690 Biostatistics Seminar. Semester course; 1 lecture hour. 1 credit. Talks by the students, faculty, and visitors describing recent research or reviewing topics of mutual interest.

691 Special Topics in Biostatistics. Lecture and laboratory hours by arrangement. 1-4 credits. The faculty (including visiting and adjunct professors) from time to time offer courses in newly developing areas of statistics and biometry. For information, contact the department secretary.

697 Research in Biostatistics. 1-15 credits.

For additional related courses, see offerings in mathematical sciences and statistics available in the Department of Mathematical Sciences, College of Humanities and Sciences.

Department of Human Genetics (GEN)

Professors: Nance (Chairman); Brown, J.; (Pediatrics); Merz (Radiation Biology); Young (Pediatrics)

Distinguished Professor: Eaves

Associate Professors: Corey; Grieve; Holmes (Microbiology); Redwine (Obstetrics/Gynecology); Wolf

Assistant Professor: Rizzo (Pediatrics)

501 Introduction to Human Genetics. Semester course; 3 lecture hours. 3 credits. An introductory course in the principles of inheritance with particular reference to genetic variation in man.

502 Advanced Human Genetics. Semester course; 2-6 lecture hours. 2-6 credits. Prerequisite: GEN 501 or equivalent. A comprehensive study of the principles of human genetics, including lectures on cytogenetics, biochemical genetics, population and quantitative

¹ Department in parentheses indicates joint appointment.

genetics. Each unit is well defined and can be taken separately for variable credit.

504 Biochemical Genetics. Semester course; 3 lecture hours. 3 credits. Prerequisite: biochemistry. Mechanisms of gene action as illustrated by inherited biochemical defects in man.

511 Human Cytogenetics. Semester course; 3 lecture hours. 3 credits. Prerequisite: GEN 501 and 502 I and II. A seminar format is used to discuss the recent advances in cytogenetics. Student participation will be through classroom discussion and informal presentations taken from the literature. Clinical cases are used to illustrate the application of special diagnostic methodologies.

516 Population Genetics. Semester course; 3 lecture hours. 3 credits. Genetic and ecological factors affecting normal and abnormal variation within and between populations of organisms, especially man.

518 Methods in Human Population Genetics. Semester course; 3 lecture hours. 3 credits. I. Data analysis and discussion of methods including segregation analysis and linkage. Topics covered will include inbreeding, ascertainment, and genetic epidemiology.

519 Quantitative Genetics. Semester course; 3 lecture hours. 3 credits. Methods of analysis of quantitative traits in families and populations.

520 Principles of Human Behavioral Genetics. Semester course; 3 lecture hours. 3 credits. The theory of genetic and nongenetic transmission considered in relation to the design, analysis, and interpretation of studies to identify the principal genetic and environmental causes of behavioral variation. Included will be analysis of intelligence, personality, social attitudes, and psychiatric disorders.

531 Dental Genetics. Semester course; 1 lecture hour. 1 credit. The basis of inheritance and variation in man, including simple and complex modes of inheritance, the nature of mutations, human chromosomal aberrations, variation in proteins and antigens, genetic aspects of some syndromes, and birth defects.

600 Clinical Genetics. Semester course; 1 lecture and 2 laboratory hours. 2 credits. Prerequisite: GEN 501 or equivalent. Practical experience in the genetic counseling clinic and on ward rounds. Includes collection and analysis of family histories, genetic counseling, and introduction to genetic nosology.

690 Genetics Seminar. Semester course; 1 lecture hour. 1 credit. Selected topics in genetics presented by students and staff.

691 Special Topics in Genetics. Semester course; 1-4 credits. Lectures, tutorial studies, library assignments in selected areas of advanced study, or specialized laboratory procedures, not available in other courses or as part of the research training.

697 Genetics Research. 1-15 credits. Research leading to the M.S. or Ph.D. degree; elective research projects for students in the professional schools.

Department of Microbiology and Immunology (MIC)

Professors: Coleman (Acting Chairman); Berliner (Chairman, Biology) Bradley; Dalton (Pathology); Duma (Medicine); Hensch (Pathology); Madge (Pathology); Regelson (Medicine); Ruddy (Medicine); Shadomy, H.J.; Shadomy, S. (Medicine); Welshimer

Affiliate Professor: Kaplan (Surgery)

Associate Professors: Archer (Medicine); Elson (Medicine); Fisher (Biology); Formica; Gates (Biology); Holmes; Hsu; Hylemon; Keefe; Littman (Medicine); Loria; Macrina; Mohanakumar (Surgery); Munson (Pharmacology); Murray; O'Neal; Phibbs; Tew

Adjunct Associate Professors: John; Lambert; Tankersley; Tinnell

Assistant Professors: Adler (Pediatrics); Bick; Cabral; Cross (Pathology); Farnham (Biology); Giebel (Biology); Hall (Medicine); Marciano-Cabral; Schenkein (Periodontics); Schook; Shipley; Susskind (Surgery); White

Adjunct Assistant Professors: Miller

365 Infection and Immunity (Nursing and Dental Hygiene). Semester course; 2 lecture and 2 laboratory hours. 3 credits. I. A study of infectious diseases of man with emphasis on the the distribution properties and roles of pathogenic microorganisms and the varied responses of the host. Principles of prevention, control, and chemotherapy of infectious diseases are major components of the course. Microbiological procedures that relate to nursing and dental hygiene practice are demonstrated, practiced, and evaluated in laboratory exercises and conferences.

401 Microbiology. Semester course; 3 lecture and 3 laboratory hours. 4.5 credits. Prerequisite: BIC 302 or equivalent. A study of the fundamental principles of microbiology with special emphasis on those aspects of the subject that are of importance in the control of the disease state. Offered in the School of Pharmacy and open primarily to pharmacy students in the junior year; others by permission of the instructor.

502 Animal Virology. Semester course; 3 lecture and 4 laboratory hours. 5 credits. A comprehensive introduction to animal virology emphasizing the molecular aspects of viral replication, the cellular responses following viral infection, and host-virus interrelationships.

504 Biology of Prokaryotic and Eukaryotic Cells. Semester course; 4 lecture hours. 4 credits. A comprehensive survey of the biology of prokaryotic and eukaryotic cells including studies of cell composition and structure, growth and cell division, metabolism and its control, membrane structure and function, basic genetic concepts and a comparative review of the major groups of microbes including viruses, bacteria, fungi, algae, and protozoa. Prerequisites: BIC 503 (concurrently or equivalent) or permission of instructor.

¹ Department in parentheses indicates joint appointment.

506 Immunobiology. Semester course; 3 lecture and 4 laboratory hours. 5 credits. A survey of immunobiology as a total host response to foreign agents, covering the nature of antigens and antibodies, antigen-antibody reactions, immunocompetent cells, allergic reactions, tumor immunology, transplantation immunology, and immunogenetics. The laboratory is designed to provide students with practical experience, using basic immunologic techniques which may be applicable in research projects and diagnostic laboratories.

507 Medical Mycology. Semester course; 2 lecture and 4 laboratory hours. 4 credits. A comprehensive study of fungi pathogenic to man with an emphasis on their properties, pathogenesis, and laboratory diagnosis.

508 Introduction to Microbiology Research. Semester course; 1 lecture and 2 laboratory hours. 2 credits. Introduction to all active research programs in microbiology. Lectures and practical instruction in the proper use of major pieces of equipment. Required for all first year microbiology graduate students.

510 Medical Parasitology. Semester course; 2 lecture and 4 laboratory hours. 4 credits. An introduction to the animal parasites of man with emphasis on both the biological and the medical aspects of the host-parasite association.

512 Laboratory Safety. Semester course; 1 lecture hour. 1 credit. Describes health hazards commonly found in microbiology laboratories and appropriate safety precautions and responses. Includes hazards of working with bacteria, viruses, parasites, fungi, recombinant DNA procedures and regulations, and chemical, electrical, and fire hazards.

513 Infections and Immunity (Dentistry). Semester course. 3.5 lecture 4 laboratory hours. 1.5 credits. A lecture and laboratory study of the disease producing microorganisms of man with special emphasis on the roles of microorganisms in oral diseases and related topics that are of importance in dentistry.

515 Pathogenic Bacteriology. Semester course; 2 lecture and 4 laboratory hours. 4 credits. A survey of the bacteria that cause infections in man with an emphasis on their properties, pathogenesis, and laboratory diagnosis.

517 Biology of Cancer. Semester course; 3 lecture hours. 3 credits. A goal-oriented presentation of neoplasia pertaining to the cancer cell, tumor host interrelationships, carcinogenesis, immunology of cancer, tumor growth and cell kinetics, common cancer related to age and sex, basic and practical concepts of therapy, and the role of the various medical and paramedical personnel involved in cancer.

604 Cell Physiology and Metabolism. Semester course; 3 or 5 lecture hours. 3 or 5 credits. Prerequisite: MIC 504. An advanced course on the physiology and metabolism of prokaryotic and eukaryotic cells with some emphasis on the regulation of cell functions. Lectures and class discussions will focus on current scientific literature including review articles and original research papers.

653 Molecular Genetics and Gene Expression. Semester course; 3 lecture hours. 3 credits. Prerequisite: BIC 502-

503 and BIO 310 or equivalent, or permission of instructor. Examination of fundamental and current aspects of gene structure, organization, and expression at the molecular level, and both prokaryotic and eukaryotic systems will be viewed from the perspective of the gene. Topics to be covered will include gene organization and fine structure, and current methods, of analysis, molecular control mechanisms, the nature of mutation, microbial systems of genetic exchange, bacterial virus genetics, DNA insertion elements, plasmids and transposons, genetic engineering, control of macromolecular synthesis, recent developments in gene overlap, message splicing, and molecular mechanisms of recombination.

685 Advanced Immunobiology. Semester course; 1-3 lecture hours. 1-3 credits. Lectures, seminars, and conferences on basic and clinical immunobiology. Topics have included tumor immunology, cell interactions in the immune response, genetics of the immune response, mechanisms of host-defense and membrane receptors in immunology and neoplasia. Open primarily to residents, medical students, and graduate students with immunology background such as MIC 506.

690 Microbiology Seminar. Seminar course; 1 lecture hour. 1 credit. Presentation and discussion of research reports and topics of current interest to the department seminar or special group seminar.

691 Special Topics in Microbiology. Semester course; 1-4 credits. Lectures, tutorial studies, and/or library assignments in selected areas of advanced study not available in other courses or as part of the research training.

697 Research in Microbiology. 1-15 credits. Research leading to the M.S. or Ph.D. degree and elective research projects for other students.

Department of Pharmacology and Toxicology (PMC)

Professors: Harris (Chairman); Blanke (Pathology)¹; Borzelleca; Bradley (Microbiology); Dewey; Fallon (Medicine); Freer; Goldman (Medicine); Guzelian (Medicine); May; Narasimhachari (Psychiatry); Rosecrans; Rubin; Wasserman (Medicine); Woods
Adjunct Professor: Freund (Medicine)

Associate Professors: Aceto; Balster; Bowe; Carchman; Diasio; Egle; Lamb (Medicine)¹; Llewellyn (Biology); Martin; Munson; Putney
Adjunct Associate Professors: Busey; Fagan; Scala; Tardiff

Assistant Professors: Carchman; Chau; Ellis; Gewirtz (Medicine); Giordano (Otolaryngology); Hayes; Jayme (Medicine); Laychock; Lerner (Medicine); Patrick; Robinson; Wright

Adjunct Assistant Professors: Day; Franko
Research Assistant Professor: Musgrave

381 Health Sciences I. Semester course; 4 lecture hours. 4 credits. Prerequisite: MIC 365. Primarily for nursing

¹Department in parentheses indicates joint appointment.

students. Integrates and correlates pathophysiology, pharmacology and therapeutics, and pathogenetics, in the disease state. Areas of discussion include water and electrolyte imbalance, acid-base imbalance, fever, pain edema formation, shock, and blood alterations.

382 Health Sciences II. Semester course; 3 lecture hours. 3 credits. Prerequisite: PMC 391. An integration of pathophysiology, pharmacology, therapeutics, and pathogenetics, more specific pathologies such as autoimmune disease; infection; allergy, neoplasia; cardiovascular; hematopoietic, musculoskeletal, nervous system, pediatric, geriatric, and pathophysiologies; and metabolic and nutritional disease.

400 Drugs and Their Actions. Semester course; 3 lecture hours. 3 credits. This is a survey course in pharmacology which includes all the major classes of drug action. Each class is discussed in relation to mechanism of drug action and therapeutic application. Open to all junior and senior undergraduate and special students.

401 Environmental Toxicology. Semester course; 3 lecture hours. 3 credits. An environmental health science survey course focusing on the source, ecology, chemistry, biodisposition and toxicology of toxic chemicals in the biosphere with special emphasis on air, water, surface and food contamination.

403 Principles of Pharmacology (Pharmacy). Semester course; 3 lecture and 2 laboratory hours. 4 credits. The basic principles of pharmacology and a consideration in depth of the biodisposition and mechanisms of action of these agents. Drugs acting on the autonomic nervous system, chemotherapeutic agents, and drugs affecting the gastrointestinal tract are covered this semester.

404 Pharmacological Agents (Pharmacy). Semester course; 4 lecture hours. 4 credits. Includes chemotherapeutic, cardiovascular, central nervous system, and endocrine agents. (This is a continuation of PMC 403.)

413 Pharmacological and Clinical Correlations. Semester course; 3 lecture hours. 3 credits. Primarily for nursing students. This course integrates and correlates clinical experiences with the effect of drugs on biochemical, physiological, and pathological systems.

441 Pharmacology (Dental Hygiene). Semester course; 5 lecture hours. 5 credits. A didactic course designed to emphasize the principles of pharmacology and pain control and the rationale of drug actions, uses, and adverse effects.

448 Drug Dependence. Semester course; 3 lecture hours. 3 credits. Prerequisite: junior or senior standing or with permission of instructor. A broad survey course in problems of drug use and abuse intended primarily for students in the biomedical sciences, social sciences, or education. It will focus on the pharmacology of psychoactive drugs as well as a study of the psychological and sociological factors in drug-taking behavior, rehabilitation methods, and drug abuse prevention. This course may not be taken in lieu of any pharmacology offerings in the professional schools on the MCV Campus. For graduate credit see PMC 548.

515 Pharmacology for Nurse Anesthetists. Semester course; 3 lecture hours. 3 credits. The basic principles of

pharmacology including mechanisms of absorption, distribution, biotransformation, elimination, dose-response relationships, drug receptor interactions are presented followed by a detailed discussion of autonomic, cardiovascular, and renal pharmacology as it relates to nurse anesthesia.

516 Pharmacology for Nurse Anesthetists. Semester course; 3 lecture hours. 3 credits. A detailed presentation of the pharmacology of classes of drugs used by nurse anesthetists including agents with primary therapeutic effect on the brain and endocrine glands. General and regional anesthetics will be emphasized.

517/MIC 517 Biology of Cancer. Semester course; 3 lecture hours. 3 credits. A presentation of the basic aspects of neoplasia with specific blocks devoted to pathology, biochemistry, carcinogenesis, anticancer drugs, and immunology. This is an interdisciplinary course offered primarily by the Departments of Pharmacology, Microbiology, Biochemistry, and Pathology.

535 Principles of Toxicology. Semester course; 4 lecture hours. 4 credits. The basic principles of the various aspects of toxicology are presented. Correlations of functional, morphological, carcinogenic, teratogenic, and mutagenic responses with biochemical and toxicological lesions are attempted. Environmental and industrial toxicology, food and agricultural chemicals, pertinent legislation, and principles of forensic toxicology will also be covered.

536 General Pharmacology. Semester course; 4.5 lecture hours. 4.5 credits. Prerequisite: PIO 501 and BIC 503 or permission of instructor. A comprehensive course in pharmacology for graduate students. The mechanisms of action of major classes of pharmacologically active agents and basic principles of pharmacology are discussed. Topics discussed in the first half of the course include drug absorption, distribution, and metabolism; receptor theory; chemotherapy and endocrine pharmacology.

537 General Pharmacology. Semester course; 4.5 lecture hours. 4.5 credits. (Continuation of PMC 536.) Topics covered in the second semester include: autonomic, cardiovascular, and central nervous system pharmacology.

548 Drug Dependence. Semester course; 3 lecture hours. 3 credits. Prerequisite: graduate or post-baccalaureate standing. See PMC 448 for course description. This course may not be taken in lieu of any pharmacology offerings in the professional schools on the MCV Campus.

597 Introduction to Pharmacological Research. 1-10 credits. Prerequisite: permission of instructor. Research in pharmacology laboratories for beginning graduate students.

609 General Pharmacology and Pain Control. Semester course; 4 lecture hours. 4 credits. The basic principles of pharmacology, including mechanisms of absorption, distribution, biotransformation, elimination; dose-response relationships, drug-receptor interactions are presented followed by detailed discussions of the various classes of drugs, with special consideration given to mechanisms of action and untoward effects of drugs used in dentistry to control pain and related symptoms.

611 General Pharmacology and Pain Control. Semester course; 2 lecture and 1 laboratory hour. 2 credits. A continuation of PMC 509.

625 Biochemical Pharmacology. Semester course; 3 lecture hours. 3 credits. I. (Alt. yrs. '84-'85.) Selected topics dealing with drug biodisposition and cellular sites of drug action.

632 Neurochemical Pharmacology. Semester course; 3 lecture hours. 3 credits. (Alt. yrs. '84-'85.) The biochemical and theoretical aspects of the effects of drugs on the central nervous system will be discussed.

633 Behavioral Pharmacology. Semester course; 3 lecture hours. 3 credits. (Alt. yrs. '83-'84.) This is a survey course covering research on the effects of drugs on behavior. The major emphasis will be on schedule-controlled learned behavior. Additional topics include drug self-administration, drug discrimination, and conditioned drug effects and behavioral toxicology. The course focuses primarily on laboratory research in animals although human research will also be covered. The relevance of this research literature to drug treatment of behavioral disorders and substance abuse will be discussed.

637 Cardiovascular-Autonomic Pharmacology. Semester course; 3 lecture hours. 3 credits. (Alt. yrs. '83-'84.) Specialized advanced course in the pharmacology of drugs which affect these systems.

638 Advanced Toxicology. Semester course; 3 lecture hours. 3 credits. (Alt. yrs. '84-'85.) An holistic approach will be taken to describe and analyze toxicological information. Animal, organ, cellular, and biochemical responses to toxic agents are presented. Immunologic, genetic, endocrine, and central nervous system paradigms and their relationship to the mechanism of action of these agents as well as the predictive value of tests of these systems will also be covered. Pharmacokinetics and metabolism of toxic agents as well as statistical and analytical procedures will be integrated into these discussions.

639 Drug Development. Semester course; 1 lecture and 4 laboratory hours. 3 credits. (Alt. yrs. '84-'85.) Prerequisite: PMC 536 and 537 or their equivalents. The principles of drug screening, advanced testing, and procedures necessary prior to the clinical evaluation of new products are described. An emphasis is placed on physiological type procedures used in pharmacology. Conducted in cooperation with scientists of A.H. Robins.

641 Pharmacology Review (Dentistry). 1 lecture hour. 1 credit. A review course in pharmacology for senior dental students.

642 Patients, Drugs, Diseases, and Dentists. Semester course; 1 lecture hour. 1 credit. II. Discussion of patients, their diseases, drugs used to treat these diseases, and how they relate to the practice of dentistry.

644 Forensic Toxicology. Semester course; 3 lecture and 2 laboratory hours. 4 credits. (Alt. yrs. '83-'84.) Lecture and laboratory exercises in which common poisons and groups of poisons are discussed in relation to detection, diagnosis, and treatment of poisoning. Laboratory work includes basic principles of analytical toxicology.

690 Pharmacology Seminar. Semester course; 1 lecture hour. 1 credit. I, II. Members of the departmental staff, students, and visiting lecturers participate in discussion on topics of current and historical interest.

691 Special Topics. 1-4 credits. Prerequisite: permission of instructor. Special topics in pharmacology or toxicology covered in less detail in other courses will be studied in depth in this course.

697 Research in Pharmacology. 1-15 credits. Research in pharmacology laboratories for advanced graduate students.

Department of Physiology and Biophysics (PIO)

Professors: Briggs (Chairman); Biber; Cleary; Fabiato; Mayer; Merz (Radiology); Mikulecky; Price; Rao (Radiology); Stein.

Associate Professors: Boadle-Biber; Clamann; Clarke; Corley; DeSimone; Ford; Kalimi; Pittman; Poland; Ridgway; Szumski; Witorsch

Assistant Professors: Baumgarten; Bitar; Costanzo, L.; Costanzo, R.; Driska; Feher; Mierston; Pang; Wist

Instructors: Cable; Clemo; Compton; Fidelman; Heck; Hubbard; Meredith; Sullivan; Walker; Watkins

413 Introduction to Medical Electronics and Instrumentation. Semester course; 2 lecture and 2 laboratory hours. 3 credits. A survey of the electronic principles of medical and clinical instrumentation; intended as an undergraduate introductory core course for allied health students in medical technology, physical therapy, etc., to the field of electronic instrumentation. Topics include electronic fundamentals, instrumentation design theory, transducers, troubleshooting, and microprocessor applications. Recitations and laboratory sessions are designed to accommodate specific disciplines in allied health. Open to all allied health students.

461 Introduction to Human Physiology. Semester course; 3 lecture hours. 3 credits. Prerequisite: biology, general chemistry, and human anatomy. An introductory course to human physiology based on an analysis of organ systems.

482 Mammalian Physiology. Semester course; 5 lecture hours. 5 credits. A comprehensive study of the function of mammalian organ systems. (Lectures taken with PIO 502.)

501 Graduate Mammalian Physiology. Semester course; 5 lecture hours. 5 credits. Prerequisite: biology, chemistry, and physics. A comprehensive study of the function of mammalian organ system designed primarily for graduate students.

502 Mammalian Physiology. Semester course; 5 lecture and 3 laboratory hours. 6.5 credits. Prerequisite: same for PIO 501. A comprehensive study of the function of mammalian organ systems, designed primarily for dental and pharmacy students.

503 Radioisotopes. Semester course; 3 lecture and 2 laboratory hours. 4 credits. Elements of nuclear physics, statistics of counting, radiation dosimetry,

health physics, radiation protection, tracer, radiographic techniques, and liquid scintillation and gamma counting techniques.

604 Cell Physiology. Semester course; 4 lecture hours. 4 credits. A description of the functional properties of cells in terms of physics and chemistry. Topics discussed include cell structure and cytochemistry, bioenergetics, secretion, transport of material across membranes, excitation, and contractility.

605 Mathematical Physiology. Semester course; 3 lecture hours. 3 credits. The application of set theory to physiological problems. Physiological functions and mappings. Linear transformations. The use of complex numbers. Limits, derivatives and integrals and their use in physiology. Rate processes. Physiological function and its dependence on many variables. Probabilistic ideas in physiology.

606 Physical Principles in Physiology. Semester course; 4 lecture hours. 4 credits. Prerequisite: PIO 505 or permission of instructor. A survey of those principles of physics and physical chemistry underlying physiological processes. Topics include energetics of equilibrium and nonequilibrium systems, electrode processes, reaction-diffusion systems, kinetics, photochemistry, physical techniques in physiological research.

607 Applied Electronics in Biology and Medicine. Semester course; 2 lecture and 2 laboratory hours. 3 credits. II. (Alt. Yrs. '83-'84.) Fundamental principles and applications of electronics as related to biological sciences.

608 Computer Technology in the Biomedical Sciences. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Research and clinical applications of automatic and semi-automatic data acquisition. Describes the functions and operations of microcomputers in detail. Development and assembly of microcomputer systems for biomedical application using an educational kit. Students can assemble their own microcomputer driven systems in the laboratory.

612 Cardiovascular Physiology. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. An in-depth study of the original literature in selected areas of cardiovascular physiology.

614 Membrane Transport. Semester course; 2 lecture hours. 2 credits. Advanced description of membrane transport processes.

615 Neurophysiology. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. An in-depth study of the original literature in selected areas of neurophysiology.

617 Endocrine Physiology. Semester course; 3 lecture hours. 3 credits. Prerequisite: courses in mammalian physiology and biochemistry, or permission of instructor. An in-depth study of the original literature in selected areas of endocrine physiology.

618 Gastrointestinal and Renal Physiology. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. An in-depth study of the original literature in selected areas of gastrointestinal and renal physiology.

622 Circuit Design and Analysis. Semester course; 3 lecture hours. 3 credits. (Alt. yrs. '83-'84.) Prerequisite: college physics, calculus. Emphasis is placed on the understanding in depth of the analysis and design of electronic circuits. Designed to meet the needs of quantitatively-oriented students.

623 Introductory Radiation Biophysics. Summer course; 5 lecture and 10 laboratory hours. 4 credits. This introductory course exposes the student to the basic physics behind the entire spectrum of radiation producing and radiation-measuring equipment used in clinical medicine. Equipment discussed includes X-ray tubes, image intensifiers, intensifying screens, X-ray films, radionuclide imaging devices, linear accelerators, radionuclide teletherapy units, computerized emission and transmission scanners, etc. Radiation safety features involved in their design and use are also considered. Each session consists of a brief introductory lecture followed by an extensive laboratory. Each topic involves a 1-hour lecture and 2-hour laboratory, 5 days a week for 6 weeks during the summer semester.

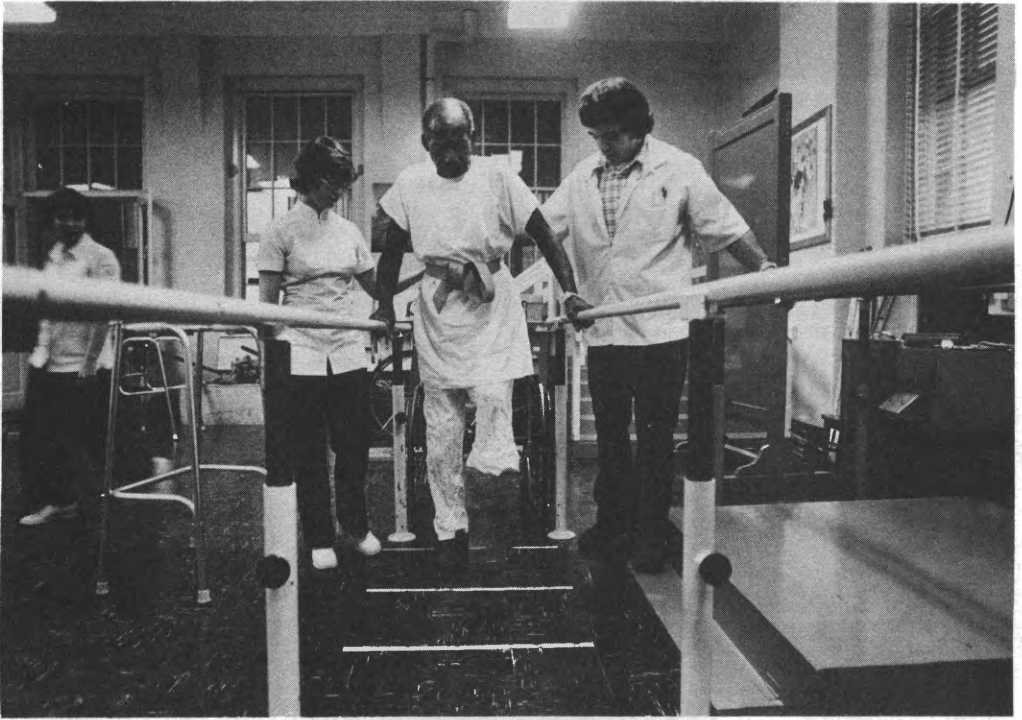
624 Physics of Diagnostic Radiology. Semester course; 3 lecture and 2 laboratory hours. 4 credits. Covers in depth the physical principles behind the use of radiation for medical diagnostic and therapeutic purposes. Topics covered include image-forming devices, analysis and optimization of image quality, linear accelerators, betatrons and sealed sources of ionizing radiation. Radiation dose measurement and treatment planning techniques are also considered. Each topic is developed with lecture and laboratory components in each semester.

625 Irradiated Biological Systems. Semester course; 3 lecture hours. 3 credits. An advanced-level course designed to provide information about the structure, properties, and biological activity of a class of agents that are mutagenic, carcinogenic, and lethal. These include ionizing and nonionizing radiation, chemical mutagens, and clastogens (chromosome breaking). The significant physics and significant chemistry will be examined. The biological responses will be considered in detail. Biological damage, repair of damage, and the expression of unrepaired and misrepaired damage will be presented in systems spanning isolated biological material, cell organelles, prokaryotes, and in vivo human responses. Consideration will also be given to cell survival, in critical target, repair processes, chromosomal and other genetic events, physiological phenomena, development effects, immune system alterations, carcinogenesis, medical uses and ecology.

690 Physiology Seminar. Semester course; 1 lecture hour. 1 credit. Reports on current physiological research and problems presented by graduate students, staff, and visiting lecturers.

691 Special Topics in Physiology. Semester course; 1-4 credits. Prerequisite: a 500-level physiology course or equivalent; permission of instructor. This course is designed to provide study of specific topics in physiology. The topics offered include cell physiology, neurophysiology, cardiopulmonary physiology, renalgastrointestinal physiology, and endocrinology.

697 Research in Physiology. 1-15 credits. Research in physiology.



PART VII—School of Allied Health Professions

THOMAS C. BARKER, Ph.D.

Dean

BENJAMIN T. CULLEN, JR., Ed.D.

Associate Dean

JAMES W. HOLSINGER, M.D., Ph.D.

Associate Dean for Veterans Administration
Affairs

JENNIE D. SEATON, Ed.D.

Director, Center for Allied Health Education

The School of Allied Health Professions was established within the Medical College of Virginia of Virginia Commonwealth University on January 1, 1969.

A fundamental reason for the establishment of the School of Allied Health Professions was to provide an administrative structure for existing educational programs in allied health disciplines and to direct the development of new programs in response to the growing need for allied health manpower. At the outset, the school incorporated existing educational programs for hospital administration, medical technology, physical therapy, radiologic technology, and X-ray technicians. A program for nurse anesthesia was inaugurated as a separate department in 1969; an existing educational program in occupational therapy located on the Academic Campus was transferred administratively to the School of Allied Health Professions in 1970; and, also in 1970, a teaching program in patient counseling formerly based within MCV Hospitals was integrated with the school. A Bachelor of Science degree with a major in health-care management was introduced in 1973 as a

cooperative venture with the School of Business. The latest offerings are Bachelor of Science degree program in medical record administration which began in the fall of 1978, a Bachelor of Science program in clinical radiation sciences, and the Master of Science program in nurse anesthesia, both of which were offered for the first time in 1979. The enlargement of present programs and the development of future ones in health-related professions are anticipated.

PROGRAMS

Departments and programs currently in this school and the degrees or certificates conferred on their graduates are

DEPARTMENT OF MEDICAL TECHNOLOGY

Bachelor of Sciences in Medical Technology

Master of Science

DEPARTMENT OF RADIATION SCIENCES

Associate in Science in Radiologic Technology

Bachelor of Science in Clinical Radiation Sciences

DEPARTMENT OF OCCUPATIONAL THERAPY

Bachelor of Science in Occupational Therapy

Master of Science in Occupational Therapy

Master of Science

PROGRAM OF PATIENT COUNSELING

Postgraduate Certificate in Patient Counseling

DEPARTMENT OF PHYSICAL THERAPY

Bachelor of Science in Physical Therapy
Master of Science

Doctor of Philosophy—Physical Therapy track offered in conjunction with the Department of Anatomy and Physiology, School of Basic Sciences.

DEPARTMENT OF HEALTH ADMINISTRATION

Doctor of Philosophy in Health Services Organization and Research
Master of Health Administration
Bachelor of Science in Health Care Management

DEPARTMENT OF NURSE ANESTHESIA

Master of Science in Nurse Anesthesia

PROGRAM OF MEDICAL RECORD ADMINISTRATION

Bachelor of Science in Medical Record Administration

Detailed descriptions of all graduate programs may be found in the *Virginia Commonwealth University Graduate Bulletin*.

PHILOSOPHY

The faculty of the school is committed to offer, through the establishment and maintenance of rigorous standards of excellence, undergraduate and graduate education that will prepare students for professional careers in the several allied health disciplines. Development of professional attitudes, emotional maturity, and ethical behavior are vital components of the educational process. It is essential that students gain a deep respect for the dignity of man and the inherent rights of patients and others who receive services. Programs are designed to include not only the development of skills to assure excellence in quality of health care, but also such factual knowledge and experiences that will provide the bases for continuing intellectual and professional growth.

Community services of the school and faculty include continuing education, consultative resources, and participation in all

pertinent areas of health care. An integral part of these efforts is to stimulate and sponsor research activities in the allied health disciplines represented within the school and to encourage interdisciplinary research.

FACILITIES

Departments and programs in the School of Allied Health Professions are presently housed in the Egyptian Building, Randolph-Minor Annex, the MCV Hospital South, the Newton House, the Nursing Education Building, the VMI Building, the Sheltering Arms Building, the Lyons Building, and the Tompkins-McCaw Library.

ACCREDITATION

Virginia Commonwealth University and its component schools are accredited by the Southern Association of Colleges and Schools, the general accrediting agency for colleges in the region. The School of Allied Health Professions is an institutional member of the American Society of Allied Health Professions, and the Virginia Association of Allied Health Professions. All its programs are approved or accredited by the appropriate national professional or educational organizations.

COURSES

Nearly all course offerings in the school are provided by departments and programs; however, selected courses considered applicable to many students in these programs have been assigned to the School of Allied Health Professions.

351 The Allied Health Student. Semester course; 3 lecture hours. 3 credits. Prerequisites: EDU 300, PSY 305. Designed to provide future allied health educators with the opportunity to read and discuss material pertaining to the psychology of adult development and the characteristics of adolescent and adult learners as these pertain to the climate setting and development of instruction in allied health disciplines.

AHP 391 Special Topics. Semester course; 1-4 credits. Prerequisite: permission of instructor. Interdisciplinary study through lectures, tutorial study, or independent research of selected topics not provided in other courses. Offered on undergraduate level.

AHP 401 Instructional Strategies. Semester course; 3 lecture hours. 3 credits. This course is designed to introduce the student to learning theory, instructional design, evaluation, and methodology. Emphasis will be

placed on the study of applying principles and techniques of teaching in all areas of allied health education.

AHP 425 Economics of Health Care. Semester course; 4 credits. Examines topic of economics as it affects the field of medical record administration. Approaches broad economic and financial concepts as applied to policy-making in the health care industry. Emphasizes the budget process in health care institutions as it affects individual departments, and how it requires accountability of each.

AHP 573 Teaching in Health Professional Schools. Section—01, Semester course; 3 lecture hours. 3 credits. Section—02 (Dental), Semester course; 3 lecture hours, 2 credits. Study of the relationships between allied health education and higher education in general, current essentials and proposed standards in education for the health professions, and theoretical approaches to the implementation of these essentials in both academic and clinical learning. Emphasis will be placed on modes of adapting to future needs of the profession and the role of graduate and continuing education in the profession.

AHP 582 Supervision in the Allied Health Professions. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Study of the supervisory process and staff development, training in communication and interpersonal skills, and public relations within the health facility.

AHP 591 Special Topics. Semester course; 1-4 credits. Prerequisite: permission of instructor. Interdisciplinary study through lectures, tutorial study, or independent research of selected topics not provided in other courses.

AHP 594 Health Education—Practicum. Section 01, General. Section 02, NUA. Section 03, MT. Semester course; 1 lecture and 4 laboratory hours. 1 to 6 credits. Prerequisite: AHP 573. Preparation, presentation, and evaluation of selected educational experiences in the appropriate undergraduate program.

AHP 596 Supervisory and Administrative Practicum in Allied Health Clinics. Semester course; 60 clock hours. 1-9 credits. Section 01 MT, Section 02 PT. Prerequisite: permission of instructor. The course is designed for the student who will be assuming supervisory and administrative roles. Areas to be covered include clinical personnel management, budgeting and ordering of materials and equipment, consultation with physicians, developing and troubleshooting clinical methods, designing job descriptions, and implementation of quality control programs.

Courses offered by the School of Education on the Academic Campus are generally oriented to graduate students interested in teaching, administration, or supervision.

STUDENT PERFORMANCE AND BEHAVIOR

The goals and objectives of the School of Allied Health Professions and its component departments and programs relate to the

education of persons preparing for professional careers in the allied health disciplines. An integral requisite of each student and practitioner is an undeviating acceptance of a professional attitude and pride that will motivate him/her to adhere to a code of professional ethics and to develop fully the competencies for practice.

Thus, the suitability of student performance and behavior relating to these professions and to the consumers of health care is a paramount concern of the administration and faculty of this school. Standards of conduct are presented in the general information section of this bulletin and relate to the students in the School of Allied Health Professions. To assure a quality of educational and clinical preparation for its graduates, the following statement is also promulgated:

"If, in the judgment of the Faculty/Administration of the School of Allied Health Professions, a student is not considered suitable for emotional, professional or related reasons, the student's academic status may be appropriately altered."

If any questions arise regarding standards of performance or behavior, it is the responsibility of students to apprise themselves of acceptable character and conduct requirements prior to matriculation in the designated department or program.

ATTENDANCE REGULATIONS

The faculty considers attendance at lectures, laboratories, and other functions a requisite to the successful acquisition of the knowledge and skills required of the professional. Hence, the faculty cannot condone absence without good reason from any regularly scheduled educational experience. At the start of each course, the instructor will relate to the class the policy of his department concerning attendance regulations for that semester. The nature of make-up work in the event of absence will be the prerogative of the instructor.

GRADUATE PROGRAMS

Graduate degree offerings in the School of Allied Health Professions are designated as basic professional or advanced level programs. Accreditation requirements for the

individual programs preclude the establishment of general school admission prerequisites, registration dates, and course and degree requirements.

It is the intent that these regulations and procedures for each program ensure the selection of applicants whose motivation, ability, character, and health status qualify them to successfully pursue graduate study. Specific information may be found in the *Virginia Commonwealth University Graduate Bulletin* or are available from the departmental graduate coordinator.

Department of Medical Technology

HISTORY

Medical technologists have been trained at MCV since 1932. However, the Department (formerly school) of Medical Technology was not formally established until 1952. The school offered a certificate and/or degree program, meeting the requirements of the American Medical Association as implemented through the Board of Schools of the American Society of Clinical Pathologists (ASCP). In 1961-62 the certificate program was discontinued, and all students accepted must have previously completed 90 semester hours, which included medical technology prerequisites. Upon completion of the course, the students were awarded a Bachelor of Science in medical technology degree.

In 1952 the program was established as six months of didactic experience with lectures and laboratory sessions held in the department, followed by a six-month rotation through the clinical laboratories. From 1952-1967, two classes were admitted each year, but the practice was discontinued with the graduation of the class of 1967. From 1968-74 only one class was admitted each year.

Beginning with the 1974 fall term, students must have completed 60 semester hours including medical technology prerequisites. Upon completion of the prescribed curriculum, the student is awarded a Bachelor of Science in medical technology degree. In 1967 a graduate program was begun leading to a Master of Science degree in medical technology.

PROGRAMS

The department offers two programs of study:

1. Baccalaureate program consisting of two semesters of didactic education, followed by a six-week summer session in a hospital laboratory somewhere in Virginia. During the senior year, students spend 23 weeks in the clinical laboratories followed by advanced courses in each medical science discipline and one course in basic education and supervision. Certified medical technicians may complete the program sooner by successfully completing challenge exams for certain courses.
2. The Master of Science program offers majors in either one of the following: clinical chemistry, hematology, clinical microbiology; or a combination of one of these disciplines with a management emphasis. These are offered for those students interested in becoming teachers or supervisors. Further information is found in the *VCU Graduate Bulletin*.

PHILOSOPHY

The medical technologist is in a unique position. The area of interest, while predominantly intellectual, also requires specialized manual and technological skills.

The university medical center affords the most favorable environment to acquire this varied knowledge.

The faculty is available to provide expertise in all areas; the large hospital provides a wide spectrum of pathological conditions, and the library is able to fulfill all literature requirements.

Education is in close proximity to that of the medical student, intern, and resident; interaction with other health-related professions gathered into the School of Allied Health Professions introduces the student to his/her position as a member of the medical team.

OBJECTIVES

The primary objective of the Department of Medical Technology is to provide the student with superior basic and advanced studies in medical laboratory science.

Careful attention is given to the develop-

ment of the professional personality of the medical technologist. A mature, responsible approach to the acquisition of the knowledge of medical laboratory science will establish the pattern for his entire career and will provide strong knowledgeable leaders in the clinical laboratory area.

FACILITIES

The department is located on the ground floor of Randolph-Minor Annex at the corner of College and Broad Streets. Thirty students are accepted each year.

The teaching laboratory is well-equipped with the latest equipment used in today's methods of laboratory medicine.

ACCREDITATION

The Department of Medical Technology is accredited by the Committee on Allied Health Education and Accreditation of the American Medical Association. A Bachelor of Science degree in medical technology is granted by Virginia Commonwealth University upon satisfactory completion of the prescribed curriculum. Upon completion of the program, the student is eligible for the national examination given by the Board of Registry of the American Society of Clinical Pathologists and the National Certification Agency for Medical Laboratory Personnel (NCAMLP). This is not an affiliate program.

UNDERGRADUATE PROGRAM

With the rapid advancement of knowledge in the field of laboratory medicine, the need for highly skilled and knowledgeable medical technologists has been recognized as a national problem. With the establishment of two other programs for laboratory workers (clinical laboratory assistants and medical laboratory technicians) to meet the demands for personnel, the graduates of this program become the trouble shooters, problem solvers, and supervisors of all of the employees in the laboratory. Students are required to spend two years in residence.

Applications are accepted upon comple-

tion of two semesters of college. Students are admitted in the fall semester and follow the university calendar.

The fall and spring semesters of the junior year are devoted to lectures and laboratory exercises in clinical microscopy, hematology, serology, immunology, blood banking, biochemistry, microbiology, instrumentation, and parasitology. The following summer and the fall semester of the second year, student technologists learn by precept and performance in a rotating internship in the laboratories of affiliated hospitals. During the second semester, students are in the classroom. Advanced courses in biochemistry, hematology, immunochemistry, microbiology, virology, and instrumentation as well as a course in supervision/education are provided.

ADMISSION REQUIREMENTS

To qualify for admission, a candidate must have completed a minimum of 60 semester hours of collegiate training in any college or university approved by a recognized regional accrediting agency. Accredited collegiate training in preparation for the study of medical technology, as for any professional career, should provide the opportunity for broad general education to include English, the social sciences, the arts, and the humanities. On entry to the department, the student must have completed 12 hours of chemistry (eight hours of general required; the remaining four hours preferred in the following order: quantitative, organic, or qualitative; other courses may be accepted); 12 hours of biology (preferred—four hours of general, four hours of human physiology, and four hours of human anatomy); three hours of mathematics; and six hours of English.

Special Admissions. Certified medical technicians (or those eligible for certification) may be admitted with less than 60 semester hours. Challenge examinations are offered.

Detailed information regarding admission requirements or the curricula may be obtained by writing to the *Director of Admissions*, Medical College of Virginia, Box 632, MCV Station, Richmond, VA 23298.

DEPARTMENTAL ACADEMIC REGULATIONS

The minimum passing grade is "D." A higher passing grade may be established for students required to repeat any course.

If a student has a passing grade in a course but fails the final examination, a re-examination may be given. The passing grade after reexamination cannot exceed a "D." A final grade of "F" precludes further reexamination. The course must be repeated. Detailed grading policies plus the mechanism for grade appeals are given to each student during orientation.

Academic promotion is determined by the faculty. The student is expected to

1. Maintain a grade-point average of 2.0 or better;

2. Have a passing grade in all courses;

3. Exhibit the attitudes and skills deemed necessary to function as a professional medical technologist. Students failing to demonstrate sufficient professional responsibility will be subject to dismissal from the program upon recommendation of the faculty and Executive Committee of the department; and

4. Pay all fees.

The clinical education requirements must be completed to the satisfaction of the clinical and academic faculty.

HONORS AND AWARDS

A. D. Williams Award. An annual award may be made, on nomination of the faculty, to a student in each class who demonstrates by virtue of high scholastic attainment and professional performance, unusual promise and ability. Character, motivation, intellectual curiosity, and realization of the opportunities for personal development will be considered. The award is made at the end of the junior and senior years.

Achievement Awards. These awards may be given for each discipline in medical technology.

Daria Downing Scholarship Award. This award is in memory of Miss Daria Downing who was the chief technologist of the clinical laboratories of MCV Hospitals from 1964 until her death in 1982. This award was established by the Departments of Pathology and Medical Technology and will be given in

December to an outstanding senior student in the Department of Medical Technology.

Kupfer Award. This award was first given in 1965 in memory of Dr. Henry G. Kupfer who was medical director of the School of Medical Technology from 1952 until his death in 1964. It is given to the senior who is considered to be the best all-around technologist. Throughout the year this student must demonstrate an outstanding sense of responsibility in all phases of medical technology, a keen concern for the patients, and the ability to work with others. The student must show a desire for personal and professional growth.

The selection of the student to receive the award is made by nominations from the clinical instructors in the various areas of rotations.

CURRICULUM

		<i>Semester Hours</i>
<i>Junior Year</i>		
MET 302	Hematology	7
MET 303	Parasitology	3
MET 304	Clinical Microscopy	4
MET 305	Microbiology	6
MET 306	Blood Banking and Homeostasis	5.5
MET 310	Clinical Immunology	3.5
MET 311-312	Biochemistry	8
MET 314	Instrumentation	4
<i>Summer Session</i>		
MET 337	Clinical Education	2
		43
<i>Senior Year</i>		
MET 407	Interpretive Clinical Immunology	2
MET 408	Interpretive Microbiology	2
MET 409	Interpretive Hematology	2
MET 410	Interpretive Biochemistry	2
MET 411	Principles of Clinical Education and Supervision	3
MET 414	Advanced Instrumentation	2
MET 483	Biochemistry Practicum	4.5
MET 484	Serology/Virology Practicum	1.5
MET 485	Hematology Practicum	4.5
MET 486	Hemostasis Practicum	1
MET 493	Microbiology Practicum	4.5
MET 494	Clinical Microscopy Practicum	1.5
MET 495	Toxicology Practicum	1
MET 496	Blood Bank Practicum	4.5
MET 497	Research Paper	1
		37

FACULTY

Professors: Izard (Chairman); Vennart (Medical Advisor)

Associate Professors: Karselis; Lindsay; Odom
 Assistant Professors: Fike; Prentice; Sauer; Sommer

COURSES OF INSTRUCTION (MET)

201 Introduction to Medical Technology. Semester course; 1 lecture hour. 1 credit. Presentation and discussion of the art of medical technology including an introduction to each of the specific areas of concentration and a tour of a hospital laboratory. Explanation of the role of the medical technologist and how the MT fits into the laboratory organization. Discussion of various job opportunities for the profession. (Open to students on the Academic Campus who are interested in medical technology as a career.)

302 Hematology. Semester course; 3 lecture and 8 laboratory hours. 3-7 credits. A study of the blood and blood-forming tissues. Emphasis is placed on hematologic techniques, accurate identification of normal and abnormal cells, and their correlation with normal or pathologic conditions.

303 Parasitology. Semester course; 1 lecture and 4 laboratory hours. 1-3 credits. A study of the life cycle of clinical infections and techniques used for isolation and identification of common parasites found in man.

304 Clinical Microscopy. Semester course; 2 lecture and 4 laboratory hours. 2-4 credits. A study of the principles and practices of urinalysis, pregnancy test, kidney function, gastric analysis, cerebrospinal fluid, and other body fluids.

305 Diagnostic Microbiology. Semester course; 3 lecture and 6 laboratory hours. 3-6 credits. Fundamental principles of diagnostic bacteriology including the study of bacteria, antimicrobial susceptibility testing, and quality control; the relationship of bacteria to infectious diseases including pathogenesis and epidemiology. Emphasis is placed on the techniques, methods, and procedures required to isolate and identify pathogenic microorganisms.

306 Blood Banking and Homeostasis. Semester course; 2 lecture and 2 laboratory hours. 2-5.5 credits. A study of the theory and principles of blood banking, with an emphasis on methods and techniques used in the laboratory for cell typing, cross-matching, and antibody identification. An introduction to the homeostatic mechanism is also presented.

310 Clinical Immunology. Semester course; 2 lecture and 3 laboratory hours. 2-3.5 credits. Basic principles of immunology and serology are introduced. Emphasis is placed on laboratory evaluation of the immune response including both cellular and humoral aspects. Serologic techniques are practiced in the laboratory sessions.

311-312 Biochemistry. Continuous course; 4 lecture and 8 laboratory hours. 2-4 credits. A study of metabolism in normal and diseased processes of the body. Emphasis is placed on the principles and methods used in testing biochemical reactions.

314 Clinical Instrumentation. Semester course; 3 lecture and 2 laboratory hours. 4 credits. Covers instrumentation found in clinical laboratories, including an introduction to electronic principles as applied to in-

strumentation. Course will examine the theory and application behind the various analytical methods used in clinical analysis.

337 Clinical Education. Summer course; 240 clock hours. 2 credits. Supervised clinical experience in hospitals of less than 400 beds is designed to give the student a broader clinical education. In addition to the application of academically acquired knowledge, this six-week affiliation provides an opportunity for the student to correlate each area of study into one composite picture for final laboratory diagnosis. Closer working relationships with other allied health personnel will be an important aspect of this affiliation.

407 Interpretive Clinical Immunology. Semester course; 2 lecture hours. 2 credits. Prerequisite: MET 306 and MET 496 or permission of instructor. Advanced study of the principles of immunology and immuno-hematology, with major emphasis on blood group systems and blood components. Includes the application of laboratory data and techniques to solve problems.

408 Advanced Microbiology. Semester course; 2 lecture hours. 2 credits. Prerequisite: MET 305 and 493 or permission of instructor. Advanced study in diagnostic microbiology including virology and mycology. The application of laboratory data and techniques to solve clinical microbiological problems is included.

409 Interpretive Hematology. Semester course; 2 lecture hours. Prerequisite: MET 302 and 485 or permission of instructor. Advanced study of the principles of hemato-poieses and their pathophysiological correlation to hematological disorders. Interpretation for morphological findings are correlated with case histories. Includes hemostatic problems.

410 Interpretative Biochemistry. Semester course; 2 lecture hours. 2 credits. Prerequisite: MET 311-312, 483, and 495 or permission of instructor. An advanced study of intermediary metabolism and its relation to pathological disorders. Case histories are used to study clinical interpretation of laboratory data.

411 Principles of Clinical Education and Supervision in the Clinical Laboratory. Semester course; 3 lecture hours. 3 credits. Introduction to the basic principles of educational theories and practice. Introduction to the basic principles of management and employee relations. Emphasis is placed on the application of these in the clinical laboratory.

414 Advanced Instrumentation. Semester course; 1 lecture and 2 laboratory hours. 2 credits. Survey of major clinical instrument systems, their operational principles, and the control and data manipulation methods associated with them, including imaging techniques.

483 Biochemistry Practicum. Continuous semester courses; 32-184 clock hours. 1-4.5 credits. Prerequisite: MET 301. Individual participation in hospital chemistry laboratories. Students gain practical experience in the use of procedures and instruments by working with the staff. After gaining competence, students are expected to perform and sign out routine laboratory work.

484 Serology Practicum. Continuous semester course; 56 clock hours. 1.5 credits. Prerequisite: MET 305. Individual participation in hospital serology laboratory.

120 School of Allied Health Professions

Students gain practical experience in the performance and use of procedures by working with the clinical staff. After gaining competence, the students are expected to properly perform and sign out routine laboratory work.

485 Hematology Practicum. Continuous semester course; 32-184 clock hours. 1-4.5 credits. Prerequisite: MET 302. Students gain practical experience in the use of procedures and instruments by working with the staff. After gaining competence, the students are expected to perform and sign out routine laboratory work.

486 Hemostasis Practicum. Continuous semester course; 40 clock hours. 1 credit. Prerequisite: MET 306. Students gain practical experience in the use of instruments and the performance of procedures by working with the clinical staff. After gaining competence, students are expected to properly perform and sign out routine laboratory work.

493 Clinical Microbiology Practicum. Semester course; 32-184 clock hours. 1-4.5 credits. Prerequisite: MET 305. Individual participation in hospital bacteriology laboratories. Students gain practical experience in the performance and use of procedures by working with the clinical staff. After gaining competence, the students are expected to properly perform and sign out routine laboratory work.

494 Clinical Microscopy Practicum. Semester course; 40 clock hours. 1 credit. Prerequisite: MET 304. Individual participation in hospital fluid laboratories. Students gain practical experience in the use of procedures and instruments by working with the staff. After gaining competence, the students are expected to perform and sign out routine laboratory work.

495 Toxicology Practicum. Semester course; 32 clock hours. 1 credit. Prerequisite: MET 301. Individual participation in hospital toxicology laboratory. Students gain practical experience in the correct approach to solving toxicological problems and the use of procedures and instruments by working with the staff. After gaining competence, the students are expected to perform and sign out routine laboratory work.

496 Blood Bank Practicum. Semester course; 32-184 clock hours. 1-4.5 credits. Prerequisite: MET 306. Individual participation in hospital blood bank laboratories and Richmond Metropolitan Blood Services. Students gain practical experience in the use of procedures, instruments, donor drawing, and component preparation by working with the staff. After gaining competence, the students are expected to perform and sign out routine laboratory work.

497 Research Paper. Semester course; 1 lecture hour. 1 credit. This course is designed to introduce the student to the fundamentals of scientific writing.

GRADUATE COURSES (MET)

501 Instrumental Methods of Analysis I. Semester course; 2 lecture and 4 laboratory hours. 2-4 credits. Prerequisite: permission of instructor. A study of modern research and clinical laboratory instrumentation and procedures. Principles, theory, and comparison of laboratory instruments will be discussed in

detail along with the factors affecting their operation. Two credit hours will be given students upon successful completion of the lecture portion of the course. Laboratory exercises have been designed to demonstrate the practical applications of the instruments studied in the research and clinical laboratory. Two additional credit hours will be given to students who elect and satisfactorily complete this option. Areas to be covered include: spectrophotometry, fluorometry, flame emission photometry, and atomic absorption spectrophotometry. Offered alternate years beginning 1981.

502 Instrumental Methods of Analysis II. Semester course; 2 lecture and 4 laboratory hours. 2-4 credits. Prerequisite: permission of instructor. A study of modern research and clinical laboratory instrumentation and procedures. Principles, theory, and comparison of laboratory instruments will be discussed in detail along with the factors affecting their operation. Two credit hours will be given students upon successful completion of the lecture portion of the course. Laboratory exercises have been designed to demonstrate the practical applications of the instruments studied in the research and clinical laboratory. Two additional credit hours will be given to students who elect and satisfactorily complete this option. Areas to be covered include: electrophoresis, chromatography, particle counters, radioisotope counters, and clinical laboratory automation.

580 Supervision and Administration in Medical Technology. Semester course; 3 lecture hours. 3 credits. This course is designed for students who will be assuming leadership roles in medical technology. Special emphasis will be placed on the role of the medical technologist in education. Topics to be covered include curriculum design, laboratory design, including teaching areas; budgeting, interviewing, ordering equipment and supplies, and requirements for accreditation of approved programs for MT, MLT, and CLA.

605 Advanced Hematology. Semester course; 4 lecture hours. 4 credits. To enable the student to understand the basis for special procedures used in hematology and their application in differentiating blood dyscrasias.

610 Interpretative Clinical Hematology. Semester course; 2 lecture hours. 2 credits. Prerequisite: permission of instructor. The aim of this course is to present the principles of hematopoiesis and to study related pathological and pathophysiological correlation of hematological disorders.

690 Medical Technology Seminar. Semester course; 1 lecture hour. 1 credit. Presentation and discussion of current research and topics of interest by the departmental faculty, graduate students, and visiting lecturers.

750 Special Topics in Medical Technology. Semester course; 1-4 credits. This course provides for lectures, tutorial studies, and/or library assignments in specialized areas not available in formal courses or research training.

790 Research in Medical Technology. Continuous course; 1-4 credits. Research leading to the M.S. degree.

Department of Radiation Sciences

PROGRAM OF RADIOLOGIC TECHNOLOGY

A program in radiologic technology has been offered by MCV/VCU since the 1930s. A one-year on-the-job training certificate program was offered until 1961 when it was lengthened to 24 months. In 1966, a curriculum was approved by the Council on Technologists Affairs of the American College of Radiology, American Medical Association, and the Southern Association of Colleges and Schools that offered the graduate an Associate in Science degree in radiologic technology. Students were accepted into the associate degree program beginning with the fall semester, 1966. The 24-month certificate program was discontinued with the last class graduating in 1973.

An undergraduate baccalaureate program for radiologic technologists was begun in 1979. The program leading to a Bachelor of Science degree offers concentrations in either radiologic technology education, radiology administration, and nuclear medicine technology.

PHILOSOPHY

The faculty of the program of radiologic technology is concerned with maintaining the professional image of the radiologic technologist through high-quality education and concern for the needs of the patient. We believe that in order to maintain the professional image, we must provide an environment which promotes stimulating intellectual discovery, both academically and clinically. We further believe it is necessary to foster in the student an attitude that learning is a lifelong process.

We believe it is essential that the student realize that he is responsible for the patient and that he should attempt to understand both the physical and mental problems of the patient and be inquisitive about and concerned with the patient's prescribed treatment.

We believe that the faculty must continue to grow professionally while maintaining a humanistic attitude which permits individual freedom of expression for both students and

faculty, an openness toward change, and mutual respect for all.

OBJECTIVES

1. To provide the student with the opportunity to obtain the knowledge and skills necessary to function as a competent registered radiologic technologist.
2. To provide an educational atmosphere that will engender in the student intellectual curiosity and a desire for lifelong learning and excellence in clinical performance.
3. To strive to maintain an educational environment that keeps abreast of change and new methodology within the fields of radiology and radiologic technology.
4. To provide an atmosphere in which the student develops appreciation for his role as a professional and the associated responsibility for contributing to the advancement of the profession through research, continued education, and active participation in the professional societies.

FACILITIES

The educational facilities for the Department of Radiation Sciences are located on the ground floor of the Sheltering Arms Building, 1008 East Clay Street. These facilities include a professional library, limited classroom space, and a well equipped, energized radiographic laboratory with manual and automatic film processing capabilities.

During the various phases of the curriculum, students will be assigned to each of the following affiliate institutions: Medical College of Virginia Hospitals, McGuire Veterans Administration Medical Center, and Chippenham Hospital.

ASSOCIATE IN SCIENCE PROGRAM

ACCREDITATION

The program of radiologic technology (associate in science degree) is accredited by the Committee on Allied Health Education and Accreditation. Upon completion of the program, the student is eligible for the na-

tional examination given by the American Registry of Radiologic Technologists.

ADMISSION REQUIREMENTS

Candidates for admission to the program must have completed high school or have passed a GED examination. Transcripts of high school work and Scholastic Aptitude Test (SAT) scores must be submitted with the application. Examination for Schools of Health Related Technologies. Candidates are encouraged to obtain some hospital experience, either as a volunteer or as an employee. Such experience should preferably be in the Department of Radiology, but may be elsewhere in the hospital.

Applications should be submitted after September 1 and before March 1. Applications submitted after March 1 can be accepted only on a space-available basis. Correspondence should be sent to Director of Admissions, Medical College of Virginia, Virginia Commonwealth University, Box 632, MCV Station, Richmond, VA 23298.

ACADEMIC REGULATIONS

To continue in the radiologic technology associate degree curriculum, the student is expected to

1. Maintain a minimum semester grade-point and cumulative grade point average of 2.0;
2. Obtain a passing grade in all required courses and a "C" or better in all radiologic technology courses indicated with an asterisk in the curriculum outline; and
3. Demonstrate the attitude and skills necessary to function as a radiologic technologist as assessed by academic and clinical faculty.

HONORS AND AWARDS

A.D. Williams Award. This award is given to the student in each class who has achieved the highest cumulative grade-point average.

A.D. Williams Scholarship. This scholarship may be given to a rising sophomore who demonstrates high scholastic attainment, professional clinical performance, and unusual promise as a radiographer.

E.R. Squibb Award. This annual award may be given to a sophomore student and is based on the demonstration of profes-

sionalism, competency, and academic achievement. The selection for the award is made by the faculty and students.

Clinical Radiographer Award. This award may be given annually to a sophomore student for outstanding clinical performance and the demonstration of a high standard of professionalism. The selection for this award is based on the votes of clinical radiographers in affiliate hospitals.

CURRICULUM¹

		<i>Semester Hours</i>	
		<i>Fall</i>	<i>Spring</i>
<i>First Year</i>			
ENG 101	Composition and Rhetoric	3	
ENG 102	Composition and Rhetoric		3
BIO 103	Anatomy and Physiology	3	
BIO 104	Anatomy and Physiology		3
*RTE 101	Radiographic Procedures I	4	
*RTE 103	Radiography I	3	
*RTE 104	Radiography II		3
*RTE 105	Patient Care and Ethics	3	
RTE 194	Clinical Education		3
MAT 100	College Algebra		3
		<hr/> 16	<hr/> 15
<i>Summer Session</i>			
PSY 101	General Psychology	3	
RTE 196	Clinical Education	5	
RTE 292	Independent Study: Radiography	2	
		<hr/> 10	
<i>Second Year</i>			
PHY 201	General Physics	4	
PHY 202	General Physics		4
*RTE 201	Radiographic Procedures II	4	
RTE 203	Medical and Surgical Diseases I	2	
RTE 204	Medical and Surgical Diseases II		2
RTE 293	Clinical Education III	5	
RTE 294	Clinical Education IV		5
*RTE 208	Radiation Protection		2
RTE 214	Trends in Radiography		2
		<hr/> 15	<hr/> 15

¹ Refer to *Virginia Commonwealth University Undergraduate Bulletin* for descriptions of courses in ENG, BIO, MAT, and PSY.

Summer Session

*RTE 207	Radiographic Physics	3
*RTE 211	Radiographic Procedures III	2
*RTE 213	Radiography III	2
RTE 295	Clinical Education V	5
		<hr/> 12

BACHELOR OF SCIENCE PROGRAM

The Department of Radiation Sciences offers a program leading to the Bachelor of Science degree, with an area of concentration in either education, administration, or nuclear medicine technology. The program is designed to provide advanced theoretical and practical education for the individual who wants to become an educator in radiologic technology or an administrator in a radiology department. The core curriculum consists of professional courses offered within the department. Additional course requirements in the area of concentration are offered in other departments of the university.

In an effort to provide upward career mobility to radiographers through advanced education and specialization, and to meet manpower needs for nuclear medicine technologists, the department also offers nuclear medicine technology as an area of concentration within the baccalaureate curriculum. The curriculum includes core courses within the department and academic and clinical work in the area of specialization.

PHILOSOPHY

The faculty of the Department of Radiation Sciences is concerned with keeping pace with the rapidly growing and widely diversified field of radiologic technology. There have been increased demands for people *qualified to fill* responsible positions in this area of health care. A baccalaureate degree is now required for those desiring a teaching position in the field. The administration of a radiological facility has become so complex that even small institutions are in need of educated individuals who are prepared to assume this responsibility. The Department of Radiation Sciences recognizes and attempts to meet that need by providing both an educational and an administrative track leading to the Bachelor of Science degree in radiologic technology. The nuclear medicine con-

centration is designed to prepare technologists for a field which is rapidly expanding and becoming increasingly sophisticated. Every effort is made to provide the student with a varied environment in keeping with the effective instruction that a large university offers.

OBJECTIVES

1. To provide the student with an opportunity for career development and advancement as a radiologic technology educator, administrator, or a nuclear medicine technologist.
2. To help meet growing manpower needs for competent individuals to provide education and administration in the field of radiologic technology.
3. To provide an atmosphere in which the student can develop to the fullest capacity as a radiologic technology professional.
4. To promote learning as a lifelong endeavor and to encourage continued professional growth through research, continued education, and active participation in professional societies.

ADMISSION REQUIREMENTS

Candidates for admission to the upper-division program must meet the following requirements:

- A. Be a registered or registry-eligible radiologic technologist (A.R.R.T.) AND possess an associate degree from an accredited college or university
or
- B. Be a registered radiologic technologist (A.R.R.T.) and have successfully completed ("C" grade or better) 3 semester hours of college algebra or equivalent and 3 semester hours of basic college English.

A high school transcript, transcripts of all college work and/or radiography training, and a copy of the registry examination report must be submitted with the application.

Students admitted without an associate degree (option "B" under admission requirements), must complete the following liberal arts requirements in addition to their major curriculum:

college algebra	3 semester hours
English	6 semester hours
general psychology	3 semester hours
anatomy/physiology	6 semester hours
general physics	8 semester hours

Students applying for the nuclear medicine curriculum are strongly encouraged to have completed two semesters of general college chemistry prior to admission. If this is not taken prior to admission, the student will be required to complete it as part of the required curriculum.

Most students will be required to appear for a personal interview as part of the application process. Part of this interview will be a written physics exam (information concerning this examination is provided prior to the interview).

Applications should be submitted after September 1 and preferably before April 1 for maximum consideration. Correspondence should be sent to the Director of Admissions, Medical College of Virginia, Virginia Commonwealth University, Box 632, MCV Station, Richmond, VA 23298.

ACADEMIC REGULATONS

- Requirements for academic promotion:
1. Maintain a grade-point average of 2.0.
 2. Have a passing grade in all courses and a C or better in all courses marked with an asterisk.
 3. Exhibit the attitude and responsibility deemed necessary to function as a professional radiologic technologist in the selected area of concentration.

CURRICULUM²
EDUCATION CONCENTRATION

		Semester Hours
<i>Junior Year, Fall Semester</i>		
EDU 300	Foundations of Education	3
CRS 301	Pathophysiology for Radiographers I	1
HMC 300	Health Care Services I	3
HCM 306	Legal and Regulatory Controls in the Health Industry.	3
CRS 309	Physics for Radiation Sci- ences and Ultrasound	3

² For descriptions of courses in Education (EDU), Business (BUS), Economics (ECO), Psychology (PSY), Computer Science (CSC), and Speech (SPE), see the *Virginia Commonwealth University Undergraduate Bulletin*.

HCM 323	Psychological Aspects of Illness and Disability	3
		16

Junior Year, Spring Semester

CRS 302	Pathophysiology for Radiographers II.	1
PSY 305	Educational Psychology	3
CRS 310	Application of Physical Prin- ciples in Radiation Sci- ences and Ultrasound	3
PSY 321	Social Psychology.	3
*AHP 351	The Allied Health Student	3
	Elective	3
		16

Senior Year, Fall Semester

*AHP 401	Instructional Methodology.	3
EDU 407	Educational Media: Utilization. . .	3
SPE 408	Speech for Teachers	3
CRS 411	Theory and Practice of Quality Assurance.	3
	Elective	3
		15

Senior Year, Spring Semester

*CRS 493	Educational Practicum.	4
CRS 412	Radiographic Health and Ecology	3
	Educational Elective.	3
	General Electives	6
		16
TOTAL.		63

CURRICULUM
ADMINISTRATIVE CONCENTRATION²

		Semester Hours
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CRS 301	Pathophysiology for Radiographers I	1
HCM 300	Health Care Organization Services.	3
CRS 309	Physics for Radiation Sciences and Ultrasound	3
BUS 321	Organization and Management I	3
HCM 301	Aspects of Illness and Disability	3
HCM 306	Legal and Regulatory Controls in the Health Field	3
		16

Junior Year, Spring Semester

BUS 203	Introduction to Accounting I	3
ECO 203	Introduction to Economics.	3
CRS 302	Pathophysiology for Radiographers II.	1
CSC 150	Basic Computer Concepts.	3
CRS 310	Application of Physical Principles in Radiation Sciences and Ultrasound.	3
BUS 331	Personnel Management	3
		16

Senior Year, Fall Semester

BUS 204	Introduction to Accounting II . . .	3
*CRS 405	Applied Radiology Management . .	3
HCM 406	Personnel Management in Health Care Facilities	3
CRS 411	Theory and Practice of Quality Assurance	3
	Elective	3
		15

Senior Year, Spring Semester

*CRS 494	Management Practicum	4
CRS 412	Radiographic Health and Ecology	3
HCM 408	Management in Health Care Facilities	3
	Electives	6
		16
	TOTAL	63

**NUCLEAR MEDICINE
CONCENTRATION**

Junior Year, Fall Semester Semester
Hours

BUS 321	Organization and Management I	3
HCM 301	Aspects of Illness and Disability	3
PSY 321	Social Psychology	3
CRS 301	Pathophysiology	1
*CRS 303	Orientation to Nuclear Medicine . .	2
CRS 309	Advanced Physics for Radiation Sciences/Ultrasound	3
		15

Junior Year, Spring Semester

CSC 150	Basic Computer Concepts	3
CRS 302	Pathophysiology II	1
CRS 310	Application of Physical Principles in Radiation Sciences and Ultrasound	3
*CRS 312	Nuclear Medicine Instrumentation and Computer Techniques	4
CRS 394	Clinical Education I	2
	Elective	3
		16

Junior Year, Summer Semester

*CRS 313	Clinical Nuclear Medicine: Non-imaging Techniques I	3
*CRS 318	Clinical Nuclear Medicine: Imaging Techniques	3
CRS 396	Clinical Education II	5
		11

Senior Year, Fall Semester

CRS 411	Theory and Practices of Quality Assurance	3
*CRS 415	Clinical Nuclear Medicine: Non-imaging Techniques II . . .	1
CRS 417	Radiopharmacy	1

CRS 419	Physics for Nuclear Medicine and C.T.	3
CRS 495	Clinical Education III	7
		15

Senior Year, Spring Semester

CRS 412	Radiation Health and Ecology	3
*CRS 491	Senior Seminar: Nuclear Medicine	1
CRS 496	Clinical Education IV	3
CRS 497	Senior Nuclear Medicine Project .	3
		15
	TOTAL	72

FACULTY

Professor: Kishore (Medical Advisor)
Associate Professor: Frarkin
Assistant Professors: Greathouse (Chairman); Akroyd;
Gerhold; Tatum; Wasseen
Adjunct Assistant Instructors: Cross; Grachan

COURSES OF INSTRUCTION (RTE)

101 Radiographic Procedures I. Semester course; 3 lecture and 3 laboratory hours. 4 credits. A multimedia course combining radiographic anatomy and positioning designed to give the student an opportunity to demonstrate knowledge during a practical examination in the radiographic laboratory. Students will be able to identify various anatomical parts on drawings, human skeleton, and on radiographs. They will also be able to critique their radiographs for accurate demonstration of the anatomy as well as the proper exposure factors used.

103 Radiography I. Semester course; 2 lecture hours. 2 credits. An introductory lecture and laboratory course covering the production of X-ray, radiographic equipment, filters, beam attenuation and restrictors, grids, intensifiers, and the prime factors of radiography.

104 Radiography II. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: RTE 103. Detailed lecture and laboratory course covering X-ray tubes, X-ray equipment, grids, intensifying screens, radiographic quality, geometry of the radiographic image, fluoroscopy, image intensifiers, and the various mathematical formulas employed in radiography.

105 Patient Care and Ethics. Semester course; 3 lecture hours. 3 credits. This course is designed to acquaint students with various aspects of patient care, specifically as it relates to radiographic and other procedures which they will encounter during their professional careers. It is also designed to prepare students to act quickly and effectively in the case of a medical emergency. Additionally, students will gain an understanding of their status as health care professionals.

194 Clinical Education I. Semester course; 240 clinical hours. 3 credits. Prerequisite: RTE 101 and 105. Clinical experience supervised by faculty and staff radiologic technologist. Students gain practical experience in radiographic techniques and positioning for various procedures in routine, emergency, portable, and operating room radiography.

196 Clinical Education II. Semester course; 360 clinical hours. 5 credits. Prerequisite: RTE 194. Supervised

clinical experience in general diagnostic radiography by faculty and staff radiologic technologists. Students gain practical experience in radiographic technique and positioning for various procedures in routine, emergency, portable, and operating room radiography.

201 Radiographic Procedures II. Semester course; 3 lecture hours. 3 credits. Prerequisite: RTE 101. Continuation of RTE 101 with emphasis on the anatomy and the procedures of gastrointestinal, urinary, neuro, and vascular radiography. Includes the types, preparation, administration, indications, and contraindications of the contrast media and the various specialized radiographic equipment necessary for these procedures.

203-204 Medical and Surgical Diseases I and II. Continuous course; 2 lecture hours. 2-2 credits. This course is designed to give the student an understanding of the principles of disease and introduction to various conditions of illness involving body systems.

208 Radiation Protection. Semester course; 2 lecture hours. 2 credits. Designed to give a basic understanding of the way in which radiation interacts with the biological system. The student will have a knowledge of the basic radiation protection philosophy and how this philosophy relates to him or her as a professional.

207 Radiographic Physics. Semester course; 3 lecture hours. 3 credits. Prerequisite: PHY 201 and 202. Designed to provide a clear understanding of all sources and uses of medical radiation. Includes the study of radioisotopes, the production of X-rays, the interaction of radioactive material, the units of radioactive exposure and absorbed dose, and the measurement of radiation.

211 Radiographic Procedures III. Semester course; 2 lecture hours. 2 credits. Prerequisite: RTE 101 and 201. Beginning with a review of RTE 101, this course will place emphasis on the additional or specialized positions which may be added to the routine examinations discussed in RTE 101 and 201.

213 Radiography III. Semester course; 2 lecture hours. 2 credits. Prerequisite: RTE 104. The student will gain an understanding of the basic method of performing quality control checks on X-ray generating equipment, accessory devices used in radiography, manual and automatic film processing, and X-ray beam collimation. The student will develop an appreciation for the advancements in technology that pertain to this profession and recognize the importance of keeping abreast of these changes.

214 Trends in Radiography. Semester course; 2 lecture hours. 2 credits. Designed to give the student an awareness of the various sub-specialties within radiology, i.e.: radiation oncology, nuclear medicine technology, ultrasonics, special procedures radiography, and to introduce topics related to new and emerging imaging modalities. Additionally, the course will provide students with an appreciation for their responsibilities as professionals with regard to lifelong learning and participation in national and local professional organizations.

293, 294, and 295 Clinical Education III, IV, and V. Continuous course; 1,120 clinical hours. 5-5-5 credits. Prerequisite: RTE 196. Clinical experience

supervised by faculty and staff technologists. Students gain expertise in all aspects of diagnostic radiography. Course may include elective rotation in ultrasonics, nuclear medicine, radiation therapy, or other specialized radiographic areas.

COURSES OF INSTRUCTION CLINICAL RADIATION SCIENCE (CRS)

301-302 Pathophysiology for Radiographers I and II. Continuous course; 1 lecture hour. 1-1 credits. Prerequisite: RTE 203, 204, or equivalent. This course emphasizes pathology as demonstrated on the radiographic film in order to determine optimal positioning and radiographic techniques. The physiology and pathology which are recorded by the radiographic image, and factors which influence the radiologist's diagnosis, therapy, and prognostic impression are also included.

303 Orientation to Nuclear Medicine. Semester course; 1 lecture and 2 clinical hours. 2 credits. This course is designed to acquaint the student with the field of nuclear medicine generally and the Program in Nuclear Medicine Technology specifically. It will also provide an introduction to clinical practice.

309 Physics for Radiation Sciences and Ultrasound. Semester course; 3 lecture hours. 3 credits. Prerequisite: RTE 207 or departmental approval. The course is designed to advance the students' knowledge and understanding in the physical principles of diagnostic radiology. New applications and recent advances in radiation physics will be discussed.

310 Application of Physical Principles in Radiation Sciences and Ultrasound. Semester course; 3 lecture hours. 3 credits. Prerequisite: RTE 309. Designed to provide a clear understanding of the physical principles of various imaging modalities such as three-phase generation, fluoroscopic and video, computerized tomography, ultrasound, and thermography.

312 Nuclear Medicine Instrumentation and Computer Techniques. Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisite: CSC 303. This course is designed to introduce students to the electronic principles of nuclear medicine instrumentation and the principles of operation for equipment which measures and records the interaction of radiation with matter.

316 Clinical Nuclear Medicine: Non-imaging Techniques I. Semester course; 3 lecture hours. 3 credits. Prerequisite: CRS 312. This course is designed to integrate basic anatomy and physiology with non-imaging *in vivo* procedures. The students will become knowledgeable about one current radiopharmaceuticals of choice, birouting of administered radiopharmaceuticals, normal and abnormal test values, and patient or specimen counting techniques.

318 Clinical Nuclear Medicine: Imaging Techniques. Semester course; 3 lecture hours. 3 credits. Prerequisite: CRS 312. This course is designed to integrate basic anatomy, physiology, and instrumental knowledge with imaging procedures. The students will become knowledgeable about current radiopharmaceuticals of choice, birouting of the administered radiopharmaceutical, accepted patient dosage levels,

normal and abnormal test findings, and contraindications for radiopharmaceutical administration.

394-396 Clinical Education I and II. Continuous course; 456 clinical hours. 2-5 credits. Prerequisite: CRS 303, co-requisites CRS 316, 318. Clinical experience supervised by faculty and staff technologists. Focus of first semester is on observation of clinical nuclear medicine practice; focus for second semester is on attainment of competence in common imaging procedures with introductory work in non-imaging studies.

405 Applied Radiographic Management. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 321 and 331. This course will aid the student in relating basic concepts in management to the radiological environment and relationship of the radiological facility to the health care system.

411 Theory and Practice of Radiographic Quality Assurance. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: CRS 310. Emphasis on measurement of beam quality, radiographic technique, and the implementation and evaluation of a quality assurance program. The course is a theoretical and investigative approach to achieving and maintaining quality assurance of radiographic systems.

412 Radiographic Health and Ecology. Semester course; 3 lecture hours. 3 credits. Prerequisite: CRS 309. An in-depth course designed to integrate the physical aspects of radiation physics with radiobiology to develop an understanding of radiation protection.

415 Clinical Nuclear Medicine: Non-imaging Techniques II. Semester course; 1 lecture hour. 1 credit. Prerequisite: CRS 316. This course is designed to integrate basic anatomy, physiology, and instrumental knowledge with *in vitro* procedures. The students will be introduced to current radioimmunoassay procedures, normal and abnormal results, and quality control for an *in vitro* laboratory.

417 Radiopharmaceutical Preparation and Quality Control. Semester course; 1 lecture hour. 1 credit. This course is designed to provide the individual with the necessary technical knowledge necessary for the preparation and quality control of radiopharmaceutical agents for *in vivo* and *in vitro* nuclear medicine studies.

419 Physics for Nuclear Medicine and C.T. Semester course; 3 lecture hours. 3 credits. Prerequisite: CRS 310. This course is designed to build upon concepts introduced in RTE 309 and RTE 310 presenting topics of interest to nuclear medicine technologists in greater depth. Will cover special theory of relativity; induced nuclear reactions; nuclide chart; radioactive decay; physical characteristics of alpha and beta particles and gamma rays, and gamma scintillation spectroscopy.

491 Senior Seminar: Nuclear Medicine. Semester course; 1 lecture hour. 1 credit. Prerequisite: senior status. This course is designed to allow the students to integrate the various individual courses into a single perspective on clinical nuclear medicine. The course will present information regarding the specific administrative requirements regarding the efficient operation of a nuclear medicine department. Additionally, the course will provide students with an appreciation for their responsibilities as health professionals, with em-

phasis on the need for lifelong learning and participation in professional organizations.

493 Educational Practicum in Radiologic Technology. Semester course; 16 clinical hours. 4 credits. Prerequisite: AHP 351 and 401. Supervised teaching practicum for students enrolled in the educational track. The practicum is designed to provide the student with a vehicle to integrate instructional methods in the classroom.

494 Management Practicum. Semester course; 16 clinical hours. 4 credits. Prerequisite: CRS 405 and HCM 404 and 406. This course is designed to allow the student to integrate managerial concepts and theory into the organizational environment of a diagnostic radiology department.

495-496 Clinical Education III and IV. Continuous course; 900 clinical hours. 7-8 credits. Prerequisite: CRS 396. The focus for the third semester of clinical education will be on proficiency in imaging procedures and competency in non-imaging procedures. The focus for the fourth and final semester of clinical education will be on the attainment of proficiency in the performance of all imaging and non-imaging procedures. Emphasis will be placed on maximum application of technical knowledge, standards of patient care, and radiation safety considerations. Students will also have an opportunity to observe and assist in auxiliary areas of nuclear medicine, e.g. radiopharmacy lab.

497 Senior Nuclear Medicine Project. Semester course; independent study. 2 credits. Prerequisite: senior status. This course is designed to provide the student with an opportunity to explore a particular area of interest in nuclear medicine in more depth than is possible in the regular curriculum. The student will work independently, but with faculty advisement, to develop knowledge and/or skill in a specialized area of nuclear medicine.

Department of Occupational Therapy

"Since the primary focus of occupational therapy is the development of adaptive skills and performance capacity, its concern is with factors which serve as barriers or impediments to the individual's ability to function, as well as those factors which promote, influence, or enhance performance.

"Occupational therapy provides service to those individuals whose abilities to cope with tasks of living are threatened or impaired by development deficits—the aging process, poverty and cultural differences, physical injury or illness, or psychologic and social disability."³

³ From *Definition and Functions*, American Occupational Therapy Association.

HISTORY

The program in occupational therapy was initiated at Richmond Professional Institute in 1942.

In 1965 the graduate program leading to a Master of Science degree in basic professional education in occupational therapy was initiated. The School of Occupational Therapy became a department in the School of Allied Health Professions in 1970 with the creation of Virginia Commonwealth University.

PHILOSOPHY

The faculty of the Department of Occupational Therapy is concerned with improving the quality of occupational therapy professional services through education relevant to current consumer needs and through the development of student attitudes of commitment to personal and professional competence. Research, community service, and continuing education are viewed as ways to improve professional services and at the same time to enhance the quality of the educational program.

The department seeks to provide individualization of educational experiences through a professional curriculum. This curriculum emphasizes experiential learning and provides an integrated education organized around a human developmental frame of reference.

OBJECTIVES

To provide the student with the opportunity to become a competent registered occupational therapist through critical thinking and problem-solving experiences.

To provide an environment for the student to develop respect for the dignity and basic needs of individuals throughout their life spans as these may be met in present and future health care delivery systems.

To provide the student with the opportunity to develop skills necessary to evaluate and execute effective treatment in occupational therapy.

FACILITIES

The educational facilities of the Department of Occupational Therapy are located in

the VMI Building at the northeast corner of Tenth and Marshall Streets.

During the junior and senior years and the two years of the basic professional master's degree program, field work assignments related to courses are made for students in a wide range of clinics and agencies in the Richmond metropolitan area. A minimum full-time 24-week extended field work requirement will be arranged in approved clinical educational facilities throughout the United States.

ACCREDITATION

Both the undergraduate and graduate programs in occupational therapy at Virginia Commonwealth University are accredited by the American Occupational Therapy Association and the Committee on Allied Health Education and Accreditation, American Medical Association.

HONORS AND AWARDS

A. D. Williams Award. An annual award presented to the student who has achieved the highest academic average in each class in the undergraduate program.

C. A. Kooiman Memorial Award. This award is given in memory of C. A. Kooiman, director of the occupational therapy curricula from 1961 until his death in 1976. The award is made annually to the graduate student completing the best research project.

PROGRAMS

Four courses of study are offered:

1. A curriculum leading to the Bachelor of Science in occupational therapy degree, which requires the completion of a minimum of 140 semester credits of work and over 960 clock hours of field work experience. Twelve weeks of the field work must be continuous.
2. A Master of Science in occupational therapy degree program designed for college graduates who wish to become occupational therapists. This program may be completed in two calendar years or may be individually designed for students who need a slower pace. The basic professional master's program includes academic courses, a thesis or

research project, and 960 clock-hours of field work experience. Twelve weeks of the field work must be continuous.

3. A Master of Science degree program for those who are registered occupational therapists. This program is individually designed in special areas of concentration. A minimum of 33 semester hours including a thesis is required.
4. A Master of Science degree program for occupational therapists with interest and experience in hand management.

Detailed information on graduate programs including specific admissions requirements may be found in the *Virginia Commonwealth University Graduate Bulletin*.

UNDERGRADUATE ADMISSION REQUIREMENTS

Students wishing to pursue a course of study leading to a Bachelor of Science degree in occupational therapy offered through the School of Allied Health Professions may be admitted after two years of college work. A total of 62 semester credits from an accredited college or university is required for entrance into the professional curriculum. Preference will be given to students who exhibit good potential for occupational therapy. An interview by members of the Admissions Committee is required in addition to information related to other criteria.

Prerequisites for Admission

English 6 semester hours
 Biological Sciences 12 semester hours
 Must include laboratory courses in human physiology and anatomy
 Psychology 12 semester hours
 Must include developmental psychology and psychology of personality
 Sociology 6 semester hours

These are considered minimum requirements. Students are encouraged to pursue further study in biology, psychology, and sociology.

Criteria for admission include grade-point average, writing skills, volunteer or paid employment, and personal qualities.

Correspondence relating to the curriculum in occupational therapy should be addressed to the Chairman, Department of Occupa-

tional Therapy, Virginia Commonwealth University, Box 8, MCV Station, Richmond, VA 23298.

For application to the professional curriculum and catalog, requests should be addressed to the Director of Admissions, Medical College of Virginia, Virginia Commonwealth University, Box 632, MCV Station, Richmond, VA 23298.

CURRICULUM

		<i>Semester Hours</i>
<i>Junior Year, Fall Semester</i>		
BIO 465	Functional Human Anatomy	4
OCT 301	Communications and Group Dynamics	3
OCT 303	Developmental Tasks and Occupational Roles I	1
OCT 305	Physical Dysfunction and Occupational Therapy I	3
OCT 307	Psychosocial Dysfunction and Occupational Therapy I	3
OCT 309	Skills Laboratory I	2
		<hr/> 16

<i>Junior Year, Spring Semester</i>		
BIO 429	Neuroanatomy	3
OCT 304	Developmental Tasks and Occupational Roles II	1
OCT 306	Physical Dysfunction and Occupational Therapy II	3
OCT 308	Psychosocial Dysfunction and Occupational Therapy II	3
OCT 310	Skills Laboratory II	2
OCT 312	History and Theory of Occupational Therapy	3
		<hr/> 15

<i>Senior Year, Fall Semester</i>		
OCT 403	Developmental Tasks and Occupational Roles III	2
OCT 405	Physical Dysfunction and Occupational Therapy III	5
OCT 407	Psychosocial Dysfunction and Occupational Therapy III	5
OCT 409	Skills Laboratory III	2
	Elective (Optional)	3
		<hr/> 14-17

<i>Senior Year, Spring Semester</i>		
OCT 412	Administration and Supervision of Occupational Therapy Services .	3
OCT 414	Research Methods in Occupational Therapy	3
OCT 418	Occupational Therapy in Health Care	3
OCT 491	Special Topics in Occupational Therapy	3
	Elective	3
		<hr/> 15

Field Work Sessions

OCT 493	Field Work	6-9
OCT 494	Field Work	6-9
OCT 495	Field Work (Optional)	6-9

ACADEMIC STANDARDS

Students are admitted to the occupational therapy programs with the expectation that they will direct maximum time and effort to the learning process. Outside activities must be scheduled by students for such dates and hours that permit full compliance with the time requirements for course work. Students must not expect that allowances will be made, except in very unusual situations, for tardiness, lack of regular attendance, and meeting deadlines for course assignments because of employment or other outside activities.

Undergraduate Program

To continue in the undergraduate curriculum, students are expected to maintain a cumulative GPA of 2.0.

1. Students who fail to maintain a cumulative GPA of 2.0 will be placed automatically on one semester of probation. Conditions of probation require the student to earn a quality-point average the semester of probation sufficient to result in a cumulative GPA of 2.0 and may include recommendations for academic counseling, assignments by individual instructors, and other appropriate conditions as outlined in a letter of notification of probationary status prepared by the Committee on Academic Standing and Student Progress.
2. Students who earn an "F" in any required course (with the exception of Field Work II) or who fail to meet the conditions of probation will not be allowed to continue in the program.
3. Students who receive two "D" grades (yet who may not have a deficient GPA) will receive a letter of concern of unsatisfactory performance with recommendations for remediation.
4. Students who withdraw from Field Work II before the midpoint of the

field work will receive a "W". Students who withdraw from Field Work II after the midpoint of the experience normally receive a grade of "F." Students who receive a "W" for field work will be reviewed by the coordinator of field work education. Students receiving an "F" will be reviewed by the Committee on Academic Standing and Student Progress which may result in termination or continuation on probationary status with continuation contingent upon remediation.

5. Students who have not fully met the requirements for admission may be admitted into the undergraduate program on a conditional status. Advancement to full status may be approved by the Committee on Academic Standing and Student Progress when the student has satisfactorily completed one semester of undergraduate studies. Students admitted on conditional status may be dismissed from the undergraduate program at the end of their first semester of undergraduate studies if they have not earned a 2.0 GPA. Conditional status is a probationary status; the requirements for advancement to regular status are specified in the student's conditional admittance letter prepared by the Undergraduate Admissions Committee.
6. To continue in good standing, students are also expected to
 - a. Pay all fees;
 - b. Maintain personal attributes and behavior which are consistent with professional practice; and
 - c. Complete field work requirements to the satisfaction of clinical and academic faculty.
7. Although arrangements are made in advance, students are reviewed prior to placement in Field Work II education. Students must have satisfactorily completed courses prerequisite to that field work experience. They must also demonstrate the maturity, stability, professional attitude, and behaviors which are essential for them to benefit and perform adequately in the placement.

FACULTY

Professor: Maurer, P. (Chairman)
Associate Professors: Chichester; Saxton; Wolfe
Assistant Professors: Barris; Hopkins; Kielhofner;
Nelson; Neville; Watts
Clinical Instructors: Cerny; Gorman; Moore, P.;
Parker; Shepherd

COURSES OF INSTRUCTION (OCT)

BIO 429 Neuroanatomy. Semester course; 2 lecture and 2 laboratory hours. 3 credits. II. Prerequisite: BIO 305. A study of the morphology and functional aspects of the central and peripheral nervous system of the human body.

BIO 465 Functional Human Anatomy. Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: BIO 205 or equivalent. A study of the anatomy and kinesiology of the human body using prosected specimens and the dissected cadaver. Particular emphasis is placed upon the study of the extremities. Intended primarily for majors in occupational therapy; not applicable to the major in biology.

301 Communications and Group Dynamics. Semester course; 2 lecture and 2 laboratory hours. 3 credits. This course is designed to introduce the occupational therapy student to the following: elements of effective communication in interpersonal relationships, nonverbal communication, problem-solving techniques, information-gathering techniques (observation, interview, documentary search, questionnaires), learning-teaching approaches, documentation, and use of medical terminology. The necessity of knowledge of these areas for appropriate professional communication is stressed.

303 Developmental Tasks and Occupational Roles I. Semester course; 1 lecture hour. 1 credit. This course explores principles of growth and processes of developmental adaptation of the infant through the childhood years. Performance skills related to self-help tasks, play/leisure tasks, and school/work tasks, viewed as occupational roles, are the focus of this course.

304 Developmental Tasks and Occupational Roles II. Semester course; 1 lecture hour. 1 credit. A study of adolescent ontogenesis and developmental tasks as they interrelate with occupational choice and preparation for later occupational roles. The course will examine the relationship of occupational development to life adaptation.

305 Physical Dysfunction and Occupational Therapy I. Semester course; 1 lecture and 6 laboratory hours. 3 credits. Physical dysfunctions prevalent in the infancy through childhood age span will be identified. The function of occupational therapy assessment and intervention as a multi variant approach in medical, educational, and community settings will be explored. Level one field work will be assigned as a portion of this course.

306 Physical Dysfunction and Occupational Therapy II. Semester course; 1 lecture and 6 laboratory hours. 3 credits. Physical disabilities prevalent during adolescence will be examined. Detailed study of the role of the occupational therapist in evaluating and treating the

special needs for this age group will be emphasized. Level one field work will be assigned as a portion of this course.

307 Psychosocial Dysfunction and Occupational Therapy I. Semester course; 1 lecture and 6 laboratory hours. 3 credits. Psychosocial stresses and pathologies which cause dysfunction during infancy through childhood will be the focus of this course. The roles and functions of occupational therapy in medical, educational, and community settings will be identified. Level one field work will be assigned as a portion of this course.

308 Psychosocial Dysfunction and Occupational Therapy II. Semester course; 1 lecture and 6 laboratory hours. 3 credits. This course will focus on common psychiatric disorders of adolescence and young adulthood followed by review of concepts and techniques of occupational therapy evaluation and intervention. Assigned level-one field work will be included.

309 Skills Laboratory I. Semester course; 1 lecture and 2 laboratory hours. 2 credits. Introduction to minor crafts, weaving, and leisure activities appropriate for infancy through old age. Emphasis is placed on activity analysis and adaptation.

310 Skills Laboratory II. Semester course; 1 lecture and 2 laboratory hours. 2 credits. Two units of instruction: woodworking—use of hand and power tools, construction and finishing techniques, and their therapeutic application; and ceramics—use of various non-wheel ceramic techniques and their therapeutic applications.

312 History and Theory of Occupational Therapy. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Examines the field of occupational therapy: its history, current status, major problems and issues, and philosophy. Delineates biopsychosocial concepts integral to understanding and using human occupation as a theoretic basis for occupational therapy practice. Examines the functions of occupational therapy.

403 Development Tasks and Occupational Roles III. Semester course; 1 lecture and 3 laboratory hours. 2 credits. A study of adult ontogenesis and developmental tasks as they interrelate with adult occupational patterns. The course will examine work, productivity, leisure, retirement, and recreation in the adult years with emphasis on the importance of occupational success and balance for adaptation in adulthood and old age.

405 Physical Dysfunction and Occupational Therapy III. Semester course; 3 lecture and 6 laboratory hours. 5 credits. Dysfunction as the result of physical disabilities which commonly occur during the adult years will be analyzed. Specific disabilities will be identified and discussed. The theory and practice of occupational therapy intervention in a variety of settings will be presented. Level one field work will be assigned as a portion of this course.

407 Psychosocial Dysfunction and Occupational Therapy III. Semester course; 3 lecture and 6 laboratory hours. 5 credits. This course will focus on common psychiatric disorders of middle adulthood-old age, followed by review of concepts and techniques of oc-

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cupational therapy evaluation and intervention. Assigned level one field work will be included.

409 Skills Laboratory III. Semester course, 5 laboratory hours. 2 credits. Three units of instruction which orient the student to the nature of work, work evaluation, and adjustment; activities of daily living and adaptive devices; and life skills.

412 Administration and Supervision of Occupational Therapy Services. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Covers the management of human and nonhuman resources to provide efficient and effective occupational therapy services; the nature of formal and informal organizations, the administrative process, and administrative tasks. Includes supervision, consultation, and the planning of occupational therapy field work education.

414 Research Methods in Occupational Therapy. Semester course; 3 lecture hours. 3 credits. Covers the steps in the research process: problem definition, literature review, research design and data collection appropriate for occupational therapy, data analysis and interpretation, and research reporting. Emphasizes action research, evaluation research, and development of a research proposal.

418 Occupational Therapy in Health Care. Semester course; 3 lecture hours. 3 credits. This course will cover the impact and relationship of the following to occupational therapy: patterns of health care in the United States and abroad, current issues affecting the delivery of health care, and the allied health professions. The student will learn to analyze community health resources in terms of organizational structure, funding, purposes of services, and client eligibility and accessibility. The influence of these components on occupational therapy services will be stressed.

491 Special Topics in Occupational Therapy. Semester course; 3 credits. Designed around the interests of students, faculty expertise, and availability and expertise of Richmond area occupational therapists or visiting lecturers. Format may include intensive minicourses or workshops, an advanced course, or independent study with some opportunity for election and the development of knowledge and skills in a specialized area of occupational therapy.

493 Field Work. 6-9 credits.

494 Field Work. 6-9 credits.

495 Field Work. 6-9 credits. Minimum total required for all field work courses, 18 Semester hours. Determination of the amount of credit and permission of the instructor and department chairman must be secured prior to registration for the course.

Supervised field work experiences are arranged in various settings for the application of academically acquired knowledge. Placements will include experiences in prevention, health maintenance, remediation, daily life tasks, and vocational adjustment. Field work settings may include hospitals, rehabilitation centers, school systems, community agencies, penal systems, etc.

Field work experiences are arranged individually, but placement in a specified location cannot be guaranteed. A minimum total of 24 weeks is required. Twelve weeks

of this must be spent on a full-time basis. When equivalent time is used, the experience will be appropriate to the learning needs of the student and will meet the stated objectives of the field experience.

When the field work extends beyond a grading period, an interim grade of "PR" will be assigned. In the event of failure, the course may be repeated only upon recommendation by the academic and clinical faculty.

Field work must be completed no later than 24 months following completion of the academic phase.

GRADUATE COURSES (OCT)

501 Basic Treatment Concepts and Skills. Semester course; 1 lecture and 2-4 laboratory hours. 2-3 credits. Introduces important occupational therapy concepts: the influence of activity on health, the basic occupational therapy process, evaluation, motivation, and learning.

503 Occupational Life Roles and Tasks I. Semester course; 1 lecture and 3 laboratory hours. 2 credits. A study of growth and developmental processes and influences from infancy through adolescence, with primary focus on life roles and occupational performance skills related to self-help tasks, play/leisure tasks, and school/work tasks.

504 Occupational Life Roles and Tasks II. Semester course; 2 laboratory hours. 1 credit. This course will examine the development of occupational behavior in the adult portion of the life span. It draws upon concepts of time, role, habits, interest, and values to examine how the normal adult proceeds through occupational choice, worker roles, and retirement. The course also examines the balance of work and play and its change in normal development. Finally the course will examine the effects and interrelationships of disability with normal occupational development in adulthood.

505 Physical Dysfunction and Occupational Therapy Intervention I. Semester course; 3 lecture and 6 laboratory hours. 5 credits. The focus of this course will be to identify and describe physical dysfunction seen in the continuum of health care in medical, educational, and community settings. A wide variety of evaluative and therapeutic approaches will be explored for the age range of infancy through adolescence. Assigned level one field work will be part of the course.

506 Physical Dysfunction and Occupational Therapy Intervention II. Semester course; 3 lecture and 6 laboratory hours. 5 credits. Beginning with the early adult years and continuing through the rest of the life span, the emphasis of this course will be twofold: (1) To identify and describe physically disabling conditions (acute and chronic) which interrupt occupational development and function during this age range; (2) To apply the theories and principles of occupational therapy to the evaluation and treatment of physically disabled persons (acute and chronic) during this age range. Assigned level one field work will be part of this course.

507 Psychosocial Dysfunction and Occupational Therapy Intervention I. Semester course; 3 lecture and 6 laboratory hours. 5 credits. This course will focus on

psychosocial pathologies which occur within the infancy through adolescence age span (including specific learning disabilities, mental retardation, and other diagnostic classifications). Theories and principles of occupational therapy intervention, useful in medical, educational, and community settings will be explored. Assigned level one field work will be part of the course.

508 Psychosocial Dysfunction and Occupational Therapy Intervention II. Semester course; 3 lecture and 6 laboratory hours. 5 credits. This course will introduce common psychiatric disorders of young, middle, and older adults followed by review of theoretical frames of reference and related occupational therapy evaluation and intervention methods. Assigned level one field work will be included.

509-510 Activity Theory and Skills I and II. Semester course; 1 lecture and 2 laboratory hours. 2, 2 credits. Analysis of student's activity skills in areas of play/leisure, self-care, homemaking, and work and development of skill in performing selected activities, including splintmaking. Emphasizes teaching, analysis, and therapeutic application of activities. Also stressed are evaluation and development of client's work, homemaking, and daily living skills.

601 Advanced Theoretical Concepts in Occupational Therapy. Semester course; 3 lecture hours. 3 credits. This course offers an advanced conceptualization of a generic theory base for occupational therapy. The course includes examination of the nature and organization of scientific knowledge, the medical model and other models of health care, sociological features of occupational therapy practice, and the study of human occupation and its disruption in illness. Prerequisites: OCT 312, 501, or student must be a registered occupational therapist.

602 Research Methods in Occupational Therapy. Semester course; 3 lecture hours. 3 credits. Covers the steps in the research process: problem definition, literature review, research design and data collection appropriate to occupational therapy, data analysis and interpretation, and research reporting. Emphasizes action research, evaluation research, and the preparation of a proposal for a thesis or project. Students with prior course work or experience in research may be permitted to take an elective instead of this course.

603 Administration and Supervision of Occupational Therapy Services. Semester course; 2 lecture and 2 laboratory hours. 3 credits. The management of human and non-human resources in the provision of efficient and effective occupational therapy services; the nature of formal and informal organizations, the administrative process, and administrative tasks. Includes supervision, consultation, and the planning of occupational therapy field work education.

605 Influences on Health and Health Care. Semester course; 2 lecture hours. 3 credits. The nature of health, illness, and disability; the sick role; relationship between occupational therapy and the health care system; current professional issues in occupational therapy.

611 The Habilitation Team in Public Schools. Semester course; 3 lecture hours. 3 credits. Examination of P.L. 94-142, The Education for All Handicapped Children

Act of 1975, with implications for allied health professionals. Emphasis on the role of the habilitation team in school programs for handicapped children.

612 Occupational Therapy Assessment of Children. Semester course; 3 lecture hours. 3 credits. Introduction to the theory of testing. Administration, scoring, interpretation, and reporting of selected tests and informal assessments useful in an occupational therapy evaluation of children. Field work experiences will be required.

613 Occupational Therapy: From Research to Practice in Cognitive Development. Semester course; 3 lecture hours. 3 credits. Review of current theory and research in cognitive development. Application of child development research to handicapped children. Emphasis on the practical implications for pediatric occupational therapy.

614 Occupational Therapy for Severely Handicapped Children. Semester course; 3 lecture hours. 3 credits. Prerequisite: OCT 612. Selected intervention strategies for pediatric occupational therapy. Emphasis on theory and the application of research to the treatment of severely handicapped children.

691 Special Topics in Occupational Therapy. Semester course; 3 credits. Designed around the interests of students, faculty expertise, and availability and expertise of Richmond area occupational therapists or visiting lecturers. Format may include intensive mini-courses or workshops, an advanced course, or independent study with some opportunity for election and development of knowledge and skills in a specialized area of occupational therapy.

693, 694 Field Work Education I and II Semester courses; 3-9 credits. Twelve-week full-time experience in programs providing occupational therapy services.

Supervised field work experiences are arranged in various settings for the application of academically-acquired knowledge. Placements include experiences in prevention, health maintenance, remediation, daily life tasks, and vocational adjustment. Field work settings may include hospitals, rehabilitation centers, school systems, community agencies, camping programs, penal systems, and the like. Field work experiences are arranged individually, but placement in a specified location cannot be guaranteed.

In the event of failure, the course may be repeated only upon recommendation by the academic and clinical faculty. Field work must be completed no later than 24 months following completion of the academic phase.

698 Research in Occupational Therapy. Semester course; 3 credits. Completion of a department proposal for a research project relevant to occupational therapy.

699 Research in Occupational Therapy. Semester course; 3 credits. Completion of a research project relevant to occupational therapy.

798 Thesis. 3 credits. Completion of a departmental proposal for a master's degree thesis relevant to occupational therapy.

799 Thesis. 3 credits. Completion of a master's degree thesis relevant to occupational therapy.

Program of Patient Counseling

HISTORY

"Patient Counseling" is a relatively new title for the practice of communicating empathic concern, support, and sensitive counsel to the physically or emotionally troubled person and assistance through the traumas of life. There is a long history of a concerted effort toward this end at the MCV Hospitals of Virginia Commonwealth University. With the appointment of the Reverend Dr. George D. Ossman as chaplain in 1943, the administration gave clear evidence of its awareness of the need for a specialized caring ministry to the hospitalized patient and his family. The chaplaincy program was significantly expanded in 1958 and was certified to begin training clergymen in the area of pastoral counseling of troubled persons. Since then, a continuous certificate-awarding, accredited program has been in existence and has evolved into the present program in patient counseling. Patient counseling, as it exists today, became an integrated program in the School of Allied Health Professions in 1970.

PHILOSOPHY

With the rapid growth of health care and the increasingly complex problems of medical ethics and viable delivery systems, it is very important to educate qualified persons to deal with the human dimensions of illness and the personal and family stress related to it. Through this program, Virginia Commonwealth University has an opportunity to make a needed impact upon health education in terms of emphasizing the human needs related to crises of living. By so doing, this university has a significant role to play in the important task of keeping health care human and utilizing technical and scientific methodology in the context of a deep respect for the total life of persons under stress.

OBJECTIVES

The Program of Patient Counseling is designed to assist an individual to work in the health field as one skilled in dealing with the whole person in the context of life's crises and in a cooperative interprofessional

team approach. It is offered to persons who have an existing identity in a helping or counseling profession. This includes clergy, social workers, institutional counselors, education specialists, psychologists, community health workers, and others in various aspects of the health professions. Basically, the program is designed to educate persons in understanding and counseling those who are involved in crisis situations, such as illness, impending death, injury, emotional collapse, family adjustment to health crisis or loss, unwanted pregnancy, and other such life crises.

FUTURE PLANS

A master's degree with a major in health and crisis-related personal and family counseling, emphasizing the practical and clinical competence of such counseling, is currently in the planning stages.

FACILITIES

Newton House is the base for the educational program and limited space is available in clinical areas to work with persons and families in crisis.

ACCREDITATION

The program is accredited by the Association for Clinical Pastoral Education, Incorporated through the Virginia Cluster for Pastoral Education. Advanced residents, upon vote of the faculty, may present themselves to the Association for Clinical Pastoral Education (Standards, 1980) and the Association for Clinical Pastoral Education and/or the American Association of Pastoral Counselors for certification.

CODE OF ETHICS

The professional behavior of the student is expected to be in accordance with the Code of Professional Ethics, as adopted by the Association for Clinical Pastoral Education (Standards, 1980), and the American Association of Pastoral Counselors on April 24, 1965 (excluding Principle IV). This code may be found in the offices of the faculty.

PROGRAMS

Students and residents serve in the dual capacity of providing service while learning.

Classes are primarily patient oriented, with actual patient contact as the learning vehicle. Didactic classes are coordinated with the entire learning process. Seminars comprise ten hours per week, other classes eight hours per week, and service care of patients the remainder. Night duty and weekend duty in rotation is required of all students in the program. Each student receives weekly individual supervision by a member of the faculty.

Several courses are offered for persons at different levels of experience and training:

1. (a) Part-time programs are available for local persons who wish to commute. This requires two days per week (plus overnights) for 16 weeks. These programs are offered twice per academic year, in the fall and spring semesters. (b) One day per week for both semesters.

2. A cooperative program with the School of Theology, Virginia Union University, is offered for senior students in the fall and spring.

3. A course for 11 weeks in the summer session is full-time and is available to post-graduate students.

4. A Residency I level year is available to six mature, experienced persons.

5. A Residency II level year is available to two selected persons in supervisory training.

6. One senior resident, Residency III, functions administratively as a departmental assistant and teaching fellow.

Residents receive stipends for services rendered. Information about stipends may be secured by contacting the admissions chairman.

ADMISSION REQUIREMENTS

1. Fall and spring semester programs: B.A. or its equivalent; B.D. M.Div., M.A., Ph.D., or equivalent. Professional standing in the community. Personal interview with a member of the supervisory staff.
2. Summer session (11 weeks): B.A., or its equivalent. Enrollment in an accredited graduate school or its equivalent, or demonstration of professional competence. Personal interview with representative of the program.
3. Residency I: B.A., or its equivalent

B.D., M.Div., M.A., Ph.D., or equivalent. Recognition in the professional community. Demonstration of personal maturity. Personal interview with supervisory staff.

4. Residency II: B.A., or its equivalent B.D., M.Div., M.A., Ph.D., or equivalent. Professional standing in the community. Two to five years experience in chosen profession. An expressed interest in pursuing the supervisory training process. Demonstration of personal psychotherapeutic or counseling experience. Intern year in an accredited center. Personal interview with supervisory staff.
5. Residency III: All of Residency II requirements, plus two full years of training in an accredited center and endorsement for supervisory training by the Regional Certification and Accreditation Committee of the Association for Clinical Pastoral Education, Inc.

PATIENT COUNSELING CURRICULUM

		Semester Hours		
<i>Residency I</i>		<i>Fall Spring Summer</i>		
PAC 551-552	Selected Issues in Health Care: I and II	1	1	—
PAC 553	Professional Identity, Function and Ethics: I . . .	2	—	—
PAC 554	Professional Identity, Function and Ethics: II . .	—	2	—
PAC 555	Theory and Practice of Patient Counseling I . . .	3	—	—
PAC 556	Theory and Practice of Patient Counseling II . .	—	3	—
PAC 593-594	Supervised Clinical Practicum: I and II	4	4	—
PAC 561-562	Group Process: I and II	2	2	—
PAC 597	Clinical Research .	—	—	3
PAC 595	Supervised Clinical Practicum III . .	—	—	5
PAC 563	Practicum in Group Process .	<hr/>		
		12	12	9

Residency II

Required

PAC 551-552	Selected Issues in Health Care I and II	1	1	—
PAC 607-608	Adv. Group Process: I and II	2	2	
PAC 611-612	Clinical Pastoral Supervision: I and II	4	4	
PAC 693	Clinical Practicum in Research			3
PAC 694	Pastoral Counseling Practicum			5
PAC 695	Group Process Practicum	—		1
Elective				
PAC 603-604	Patient Counseling Evaluation I and II	5		
PAC 605-606	Pastoral Counseling Theory and Practice: I and I		5	
		12	12	10

Residency III

PAC 551-552	Selected Issues in Health Care: I and II	1	1	
PAC 607-608	Group Process . . .	1	1	
PAC 701-702	Advanced Clinical Pastoral Supervision I and II	7	7	—
PAC 703-704	Supervised Pastoral Counseling Practicum I and II	3	3	—
PAC 793	Supervision Practicum	—	—	9
		12	12	9

Summer Intern Basic Program

PAC 500	Selected Issues in Health Care . . .	1		
PAC 510	Introduction to Patient Counseling			3
PAC 520	Use of Religious Resources in Patient Care	1		
PAC 530	Introduction to Group Process . .	1		
				6

FACULTY

Professor: Prest (Chairman)
 Associate Professor: Mauney
 Assistant Professor: Young
 Instructors: Cain; Puckett
 Clinical Instructors: Barr; Thomas
 Lecturers: Arnold; Oglesby

COURSES OF INSTRUCTION (PAC)

The Program of Patient Counseling has an integrated curriculum in which the summer basic intern and residency level students experience their core courses as a group. Exceptions to this rule are by faculty invitation only. Admission to any of the courses below is upon approval of the instructor.

551-552 Selected Issues in Health Care I and II. Continuous course; 2 lecture hours, 2 credits. Theory, research, and techniques in specialized topics of current interest are presented. Advanced students are expected to assume a leadership role and demonstrate competency in presentations on selected topics. Guest lecturers are utilized.

553 Professional Identity, Function, and Ethics I. Semester course; 2 lecture hours, 2 credits. Religious rituals appropriate for life's crisis points, such as illness, loss, guilt, birth, death, and marriage, are examined from the perspective of professional identity and functioning. Students present case materials.

554 Professional Identity, Function, and Ethics II. Semester course; 2 lecture hours. 2 credits. Professional Identity is examined developmentally and conceptually. Key professional ethical issues, such as confidentiality, abortion, euthanasia and patient rights, are presented and critiqued. Students are expected to assume a leadership role.

555 Theory and Practice of Patient Counseling I. Semester course; 3 lecture hours. 3 credits. A broad course for the beginning postgraduate student in patient counseling, emphasizing the role of the patient counselor, theological foundations, death and dying, and ministry to the poor and aging.

556 Theory and Practice of Patient Counseling II. Semester course; 3 lecture hours. 3 credits. Emphasis on psychological foundations of pastoral care and counseling, crisis intervention, human sexuality, marriage and family counseling, pastoral counseling and alcoholics, and group dynamics.

561-562 Group Process I and II. Continuous course; 4 lecture hours. 4-4 credits. This course utilizes small group interaction as a vehicle to explore techniques and procedures common to group behavior and as a laboratory for learning relational skills and techniques.

593-594 Supervised Clinical Practicum I and II. Continuous course; 8 lecture and 28 clock hours. 8 credits. The student is assigned to selected areas of the hospital and is given the opportunity to apply and practice interview and therapeutic skills with patients and their families under faculty supervision. The student presents clinical materials in seminars for critical review. One hour individual faculty supervision is provided.

595 Supervised Clinical Practicum III. Semester course; 3 lecture and 7 clock hours. 5 credits. Emphasis given to the areas of the student's research project for the summer.

596 Practicum in Group Process. Semester course; 2 clock hours. 1 credit. This course is a continuation of PAC 561–562.

597 Clinical Research. Semester course; 1 lecture and 8 clock hours. 3 credits. The student is expected to complete an original research project using the clinical areas of the hospital and to present this to the department.

Residency II

603–604 Patient Counseling Evaluation I and II. Continuous course; 4 lecture and 20 clock hours. 5 credits. The objective of this course is to evaluate the developing ability of the student in patient care situations and to increase the level of competence as a hospital counselor-chaplain.

605–606 Pastoral Counseling Theory and Practice I and II. Continuous course; 8 lecture and 6 clock hours. 5 credits. Issues and dynamics developed in the counseling relationship are explored in terms of both the counselor and counselee. Each student is expected to be involved in at least two ongoing counseling relationships and to submit counseling tapes weekly.

607–608 Advanced Group Process I and II. Continuous course; 4 lecture hours. 4 credits. This course utilizes small group interaction as a vehicle for learning relational skills and techniques.

611–612 Clinical Pastoral Supervision I and II. Continuous course; 4 lecture hours. 4 credits. Introduction to clinical supervision for those students whose goal is to become certified as supervisors in clinical pastoral education. Experiences under supervision of the students themselves will be utilized, as well as supervision the advanced students may be giving to beginning students, and the rapidly growing literature in clinical supervision.

693 Clinical Practicum in Research. Semester course; 1 lecture hour. 8 clock hours. 3 credits. The advanced student researches and studies an area of specialty within the hospital and develops further a competency in that specialty. Original research is expected and supervision provided for this work.

694 Pastoral Counseling Practicum. Semester course; 2 lecture and 4 clock hours. 5 credits. Prerequisite: PAC 605–606. Emphasis on increased competency in counseling. Audio and video tapes are used to evaluate the counseling process. A growing professional identity as counselor is expected of the student.

695 Group Process Practicum. Semester course; 2 clock hours. 1 credit. Prerequisite: PAC 607–608. Group dynamics are experienced and observed through functioning as a small interactive group.

Residency III

701–702 Advanced Clinical Pastoral Supervision I and II. Continuous course; 4 lecture and 30 clock hours. 14 credits. Advanced students who are supervising beginning students will present their work for critique by the faculty. Emphasis will be given to gaining skill in the theory and practice of supervision, developing and administering an educational program, integrating and

understanding of the person as seen from the various helping disciplines, and developing skill in group functioning and leadership.

703–704 Supervised Pastoral Counseling Practicum I and II. Continuous course; 4 lecture and 6 clock hours. 3 credits. Prerequisite: PAC 605–606. Particular emphasis given to the growing identity and competence as a counselor. Students critique each other with faculty supervision.

710 Supervision Practicum. Semester course; 30 clock hours. 9 credits. The student applies supervisory skills through designing and conducting a clinical educational experience for basic students in patient counseling. Careful supervision and evaluation of the student is provided. Available only to postgraduate students in patient counseling approved by the faculty.

Summer Basic Program

500 Selected Topics in Health Care. Semester course; 2 lecture hours. 1 credit. A variety of health care professionals are utilized to present to the beginning student selected topics designed to enable the student to better understand the various forces at work in health care and the resources that are available. Special emphasis is given to understanding the general hospital and its role in the community.

510 Introduction to Patient Counseling. Semester course; 4 lecture hours. 14 clock hours. 3 credits. The student is assigned to selected areas of the hospital and is given the opportunity to practice and develop relational skills with patients and their families as they adjust to the hospital situation, and to present this work for supervision and peer feedback in seminars and individual supervision.

520 Use of Religious Resources in Patient Care. Semester course; 2 lecture hours. 1 credit. Students present clinical material related to subject areas for class reaction and supervision. Religious rituals, methodology of usage, and philosophical and theological issues will be covered.

530 Introduction to Group Process. Semester course; 2 lecture hours. 1 credit. This course utilizes small group interaction as a vehicle to explore techniques and procedures common to group behavior and as a laboratory for learning relational skills and techniques.

540 Foundations of the Person. Semester course; 2 lecture hours. 1 credit. A comparative look at theological and behavioral understandings of the person, with particular emphasis given to implications for health and illness.

Courses Offered to Part-time Students

510 Introduction to Patient Counseling. Semester course; 4 lecture and 10 clock hours. 2 credits. The student is assigned to selected areas of the hospital and is given the opportunity to practice and develop relational skills with patients and their families as they adjust to the hospital situation, and to present this work for supervision and peer feedback in seminars and individual supervision. Offered fall and spring semesters.

511 The Professional as Helper. Semester course; 2 lecture hours. 2 credits. Utilizing the student's professional identity as a helping person, this course is designed to enable the student to identify areas of growth and to develop a model for learning in these areas. The student's professional functioning within the community and the hospital is to be presented to the seminar for group discussion and supervision. Current literature in the field will be explored and application made to the learning areas. Offered fall and spring semesters.

521 Caregivers of the Dying and their Survivors. Semester course; 3 lecture hours. 3 credits. The student is exposed to the phenomenon of death through literature, lectures, films, and discussions. Small group experiences under faculty supervision provide interpersonal stimulation, offering an opportunity to correlate knowledge with personal stance.

551-552 Selected Issues in Health Care. Semester course; 1 lecture hour. 1 credit. Theory, research, and techniques in specialized topics of current interest are presented. Guest lecturers are utilized extensively. Offered fall and spring semesters. Undergraduate credit is given to those persons who do not hold baccalaureate degrees.

592 Independent Study in Patient Counseling. Variable credits. 2-3 hours. The student is given the opportunity to increase clinical and interpersonal skills in specialty areas through patient care, parallel reading, and individual supervision. The student is expected to take responsibility for this learning process.

Department of Physical Therapy

HISTORY

The Department of Physical Therapy of the School of Allied Health Professions was established in 1945 as the School of Physical Therapy at the Medical College of Virginia. Between 1945 and 1954 the program consisted of a 12-month professional course based upon at least three years of college work or the possession of an R.N. title. In 1954, a two-year program based on previous college work was initiated leading to the Bachelor of Science in physical therapy to eligible graduates for the first time. The last 12-month professional course was offered during the school year of 1954-55. Between 1956 and 1968 the two-year professional program leading to the Bachelor of Science degree was the only program offered.

In 1946, a graduate program offering the Master of Science degree in physical therapy was established and continued to function until 1952 when it was discontinued. The

program was reinstated in 1968 and expanded in 1971 under a full-time director.

PHILOSOPHY OF THE DEPARTMENT OF PHYSICAL THERAPY

The primary principle directing the activities of the department is commitment to optimal patient care through physical therapy. Physical therapy is an integral part of the total care of many patients, and is also essential to education of the public in maintaining health. The department's principal contribution to patient care is through education of future physical therapists. The faculty's first obligation is to educate a generalist through a basic professional program while recognizing the need to give the beginning practitioner a foundation for further professional growth and specialization. Additionally, the faculty is committed to advanced education of physical therapists and to the development of new knowledge in the field of physical therapy.

OBJECTIVES

In order to offer the student in physical therapy the best possible education, the faculty is committed to providing a stimulating and challenging environment which allows the student to

1. Learn through intellectual inquiry and discovery;
2. Develop facilities for self-expression and self-evaluation and to learn to share experiences with classmates, instructors, and others;
3. Discover that learning for and within a profession is a lifelong process;
4. Develop a sense of responsibility toward the patient. This implies an understanding of the patient's problems and total treatment, an inquisitive attitude toward the total treatment of the patient and a compelling sense of obligation to provide for the patient the best form of treatment possible at all times;
5. Develop the capacity for participating in any of the various areas of physical therapy practice;
6. Acquire the ability to analyze and interpret observations;
7. Based on medical referral, be able to evaluate the patient's status and select

specific and appropriate treatment procedures;

8. Develop understanding for total patient care as related to other health professions both in institutional care, in community facilities, and in the patient's home;

9. Develop ability to assume responsibilities in the administration of different types of treatment facilities;

10. Develop the facilities for continuing and self-education;

11. Develop and improve skills of communication and personal relationships;

12. Grow professionally and contribute in supervision, instruction, or research; and

13. Develop respect for the dignity of man and an understanding of basic human needs.

The faculty also believe that in order to maintain excellence in the educational process it must be given the opportunity to develop professionally and personally toward self-gratification and to function in an atmosphere which permits individual expression, implementation of change, and mutual respect.

FACILITIES

The Department of Physical Therapy is located on the third and fourth floors of MCV South Hospital at the southeast corner of Twelfth and Broad Streets.

This building houses administrative and faculty offices, classrooms, physical therapy laboratories, and student facilities, such as locker rooms and lounge. Classrooms and laboratories in other buildings on campus are used as needed.

Clinical education experiences for the students are offered in physical therapy clinics throughout Virginia and the country.

PROGRAMS

The department offers three programs:

1. A baccalaureate upper-division program extends over two years and has both didactic and clinical components. The first year is designed to introduce students to the relationships of normal human structure and function and the basic concepts of abnormality. The second year concentrates on relating previous learning experiences to specific pathological conditions.

2. The Master of Science program is designed for students already having a baccalaureate degree in physical therapy. Areas of specialization have been developed in therapeutic kinesiology, teaching therapeutic exercise, general kinesiology and biomechanics, pediatrics, orthopedic rehabilitation, academic and clinical education, and organization and delivery of physical therapy services. A new interdisciplinary curricular track in geriatric physical therapy was established in 1980. An interdisciplinary program in hand rehabilitation is co-sponsored by the Departments of Physical Therapy, Occupational Therapy and the Division of Plastic and Reconstructive Surgery.

3. Doctoral program in neurophysiologic physical therapy or anatomy, orthopaedic physical therapy, is offered jointly with the Departments of Physiology and Anatomy in the School of Basic Sciences. Interested students should write to the Department of Physical Therapy for details.

Further information on graduate programs, including complete program descriptions and specific admissions requirements may be found in the *Virginia Commonwealth University Graduate Bulletin*.

ACCREDITATION

The program offered by the Department of Physical Therapy, is accredited by the American Physical Therapy Association.

ADMISSIONS

Prerequisites for admission include a minimum of 64 semester hours (or 96 quarter hours) in an accredited college or university. A grade of "D" in any of the required courses is not acceptable. The average grade for all required courses must be above "C." Priority will be given to qualified Virginia residents.

This program of study must include a minimum of

1. English—6 semester hours, 9 quarter hours, or the equivalent.
2. Biological Sciences—8 semester hours or 12 quarter hours including laboratory experience. This may be satisfied by

general biology or general zoology. No more than half may be botany.

3. Chemistry—a course in general chemistry, 8 semester hours including laboratory experience.
4. Physics—a course in general physics, 8 semester hours including laboratory experience.
5. Mathematics—must have completed a minimum of 3 semester hours of college algebra and plane trigonometry or the equivalent.
6. Social Science—6 semester or 9 quarter hours in psychology—3 semester hours must be in general psychology. A total of 12 hours in social science.

Recommended courses to complete this requirement are child, adolescent, or abnormal psychology, personality development, psychology of adjustment, sociology, anthropology, economics, history, philosophy, or statistics.

In addition to the requirements some recommended courses include embryology, histology, comparative anatomy, vertebrate or human anatomy, kinesiology and human physiology, foreign languages, such as Latin, French, or German, analytic geometry, calculus, and courses in physical education dealing with an analytical approach to human movement.

SELECTION FACTORS

The Medical College of Virginia of Virginia Commonwealth University is a state-aided university and gives admission preference to state residents. All applicants are evaluated by uniform criteria without regard to national origin, color, race, religion, or sex. Deadline for applications is December 15.

Students are selected by the Admissions Committee on the basis of excellence of pre-physical therapy education, recommendations, and results of personal interviews with members of the committee. The interview process is standardized and includes administration of SCAT tests and a writing sample. The minimum acceptable grade-point average is 3.5 for non-residents; 3.0 for Virginia residents.

Interviews with members of the Admissions Committee are a significant part of the committee's evaluation and selection pro-

cess. The members of the Admissions Committee seek information on the student's knowledge of and interest in the physical therapy profession and affords the applicant the opportunity of providing additional information during the individualized interview session.

PROGRAM CHANGE IS PLANNED FOR LATE 1980s

The department is preparing for a change in the entry-level program. The new program will lead to a Master of Science in physical therapy and will replace the present Bachelor of Science entry-level program. As currently planned, candidates for admission will be required to have a minimum of 90 semester hours credit in undergraduate study which will include required prerequisite courses. The professional program is anticipated to be a three-year program which will include instruction at both upper undergraduate and graduate levels.

Since the exact date of initiation of this program is not known at this time, interested applicants are urged to keep informed of developments by periodic contact with the Department of Physical Therapy, School of Allied Health Professions, Virginia Commonwealth University, Box 224, MCV Station, Richmond, VA 23298, (804) 786-0234.

CURRICULUM PLAN

The total physical therapy curriculum is viewed as a dynamic and evolving entity; content, emphasis, and duration of subject matter presented within a course title may be subject to modification for the sake of improving and/or updating the professional educational program.

Students are admitted as juniors for the fall term after the completion of two or more years of undergraduate work. The program extends over a period of two years and leads to the degree of Bachelor of Science in physical therapy.

The first year of study is designed to introduce the student to the relationships of normal human structure and function and to introduce basic concepts of abnormality. An attempt is made to integrate classroom material with beginning clinical experiences. During the first year the student will have opportunities to observe, evaluate, and treat

patients in clinical facilities in Richmond and surrounding counties, on a part-time basis. A four week full-time clinical assignment is required between the junior and senior years. Students will be assigned between June and August to a facility in Virginia or in a nearby state. Students will continue to develop skills in evaluating and treating patients under supervision of qualified clinical educators.

The second year concentrates on relating previous learning experiences to specific pathological conditions. The student learns to evaluate patient problems, to plan, and to carry out treatment programs through a problem-solving approach. The student learns to consider the psychosocial implications of disease as they affect the total patient care process. Principles of health care administration are presented and related to patient management.

During the academic year part-time clinical experiences will emphasize the problem-solving approach in learning. The student will apply advanced clinical evaluation and treatment procedures and learn to correlate specific medical problems with appropriate choices of evaluation and treatment procedures.

At the completion of the academic work, which at present extends from the end of August to the middle of March, students will be assigned to two eight-week full-time clinical affiliations in Virginia or another state. At the completion of these affiliations, students return to the campus for one week. During this week students are expected to relate clinical experiences and significant learnings as well as significant problems to the faculty within small group sessions. At completion of these sessions, students become eligible for state board licensure.

CURRICULUM

<i>Junior Year</i>	<i>Semester Hours</i>
PHT 301-302 Functional Anatomy	14
PHT 303 Microscopic Anatomy	2
ANA 403 Embryology	1
PHT 307-308 Functional Neuroanatomy	6
PHT 309 Rehabilitation I	1
PHT 310 Physical Agents	3
PHT 311-312 Physical Therapy Evaluation Procedures I	2
PHT 313-314 Clinical Science I	3

PHT 393-394 Clinical Practicum I	1
PHT 395 Clinical Practicum II	1
PIO 461 Introduction to Human Physiology	3
	<hr/> 37

Senior Year

PHT 405-406 Professional Literature	1.5
PHT 407-408 Therapeutic Exercise	12
PHT 409-410 Physical Therapy Evaluation Procedures II	3
PHT 411-412 Clinical Science II	8
PHT 416 Physical Therapy Management	2
PHT 493-494 Clinical Practicum III	2
PHT 495-496 Clinical Practicum IV	4
	<hr/> 32.5

GRADES AND PROMOTIONS

The minimum passing grade for all required professional courses leading to the baccalaureate degree in physical therapy is "C." A student who fails a test in a course may be reexamined by consent of the instructor. The grade after reexamination cannot be above a "D." All courses must be completed with a passing grade for the student to be eligible for promotion or graduation. Grade reports are given to students as each course is completed. Satisfactory completion of the previous semester's course work is a prerequisite to the next semester. All students are assigned a faculty advisor for two years and borderline students are counseled frequently.

Promotion is based on recommendation of the faculty. The student is expected to

1. Maintain a grade-point average of 2.0 or better;
2. Complete satisfactorily all noncredit courses;
3. Obtain a passing grade in all courses;
4. Complete clinical education requirements to the satisfaction of the clinical and academic faculty;
5. Demonstrate personal characteristics that indicate commitment to the expectations of the profession of physical therapy and the educational program;
6. Pay all fees.

FINANCIAL ASSISTANCE

A limited amount of financial assistance is available to both junior and senior physical therapy students. The amount of assistance awarded the individual student is based on the availability of funds and the need shown

by the student. MCV/VCU provides three types of student assistance: scholarships, loans, and campus employment.

For information on financial assistance, write to the Financial Aid Office, Medical College of Virginia, Virginia Commonwealth University, Box 244, MCV Station, Richmond, VA 23298.

HONORS AND AWARDS

Frederick E. Vultee Memorial Award. This award was first given in 1964 in memory of Frederick E. Vultee, M.D., who was medical director of the School of Physical Therapy from 1960 until his death in 1962. This award is made in recognition of superior clinical performance during the senior year. It is given to the student who demonstrates an outstanding sense of responsibility for patients, colleagues, and the profession, and who demonstrates exceptional potential for personal and professional growth. The award includes a certificate and a U.S. savings bond.

STATE LICENSURE AND REGISTRATION

Graduates are eligible for registration in the state of Virginia and throughout the United States and its territories.

FACULTY

Professors: Payton (Chairman)
Associate Professors: Lamb; Newton
Assistant Professors: Gudas; Hill; Mangine;
McDonald; Personius; VanSant
Instructor: Donohue
Clinical Instructors: Adams, M.; Breidenbaugh;
Kahsar; Lisle; Miller; Murray; Riani; Seay;
Thomas, J.

COURSES OF INSTRUCTION (PHT)

The Department of Physical Therapy has an integrated curriculum in which subject matter is taught in blocks of time which does not lend itself to identification by consistent lecture or laboratory hours per week. In lieu of this the hours are identified more realistically by total hours taught.

301-302 Functional Anatomy. Continuous course; 180 total lecture and 100 total laboratory hours. 14 credits. Planned specifically for the physical therapy student to develop a thorough understanding of those fundamental facts and principles that apply most directly to his future work. Particular emphasis is placed upon the

anatomy of the musculoskeletal and neuromuscular systems. Abnormal functions, as encountered later during clinical work, are discussed and related to normal living structure and function. Students are required to dissect the human body.

303 Microscopic Anatomy. Semester course; 40 total lecture hours. 2 credits. A study of the basic principles of living tissue. Emphasis is placed on structural and functional relationships with the needs of the physical therapist in mind.

307-308 Functional Neuroanatomy. Continuous course; 100 total lecture hours. 6 credits. A study of the basic structural and functional aspects of the human nervous system. Clinical phenomena are introduced for the purpose of promoting understanding of function and relating the subject to the practice of physical therapy.

309 Rehabilitation I. Semester course; 12.5 total lecture and 8 total laboratory hours. 1 credit. Designed to orient the beginning physical therapy student to the hospital setting and to his future professional role. Instruction is given in safety procedures, transfer techniques, the medical record, vital signs, medical aseptic technique, and principles of bandaging.

310 Physical Agents. Semester course; 28 total lecture and 31 total laboratory hours. 3 credits. A study of the theory and therapeutic application of massage, hydrotherapy, thermotherapy, ultraviolet, compression, and traction. Emphasis is on clinical application and problem solving.

311-312 Physical Therapy Evaluation Procedures I. Continuous course; 25 total lecture and 30 total laboratory hours. 2 credits. Designed to teach some of the basic measurement procedures used by the physical therapist in patient evaluation. These include measurement of the length and girth of body parts, joint range of motion, manual muscle testing, and postural analysis.

313-314 Clinical Science I. Continuous course; 30 total lecture and 14 total laboratory hours. 3 credits. This course presents the basic psychological components of patient care. The second portion is designed to acquaint the student with the principles of evaluation, goal setting, and program planning; to offer practical skills in functional training and an overview of the clinical picture of severely physically disabled patients.

393-394 Clinical Practicum I. Continuous course; 60 clock hours. 1 credit. In addition to lectures and discussion sessions concerning clinically related topics, junior students participate in supervised clinical experiences during the fall and spring semesters. These part-time clinical experiences provide the student with an opportunity to observe, evaluate, and treat patients in clinical facilities in the city of Richmond and surrounding counties.

395 Clinical Practicum II. Semester course; 160 clock hours. 1 credit. During the summer, junior students are assigned to physical therapy clinics throughout Virginia and neighboring states for a period of four weeks between June and August. This full-time clinical experience provides the student with an opportunity to integrate and apply junior course work to the clinical set-

ting under the supervision of a qualified clinical educator.

405-406 Professional Literature I and II. Continuous course; 30 total lecture hours. 1.5 credits. This course is designed to give the student the opportunity to pursue and present a topic of personal interest. The presentation may be in the form of a scientific paper, research, or a project of professional relevance.

407-408 Therapeutic Exercise. Continuous course; 150 total lecture and 60 total laboratory hours. 12 credits. Study of exercise as a therapeutic measure is approached through scientific principles acquired from the basic medical sciences. Included are the general principles of human development and tests and measurements, normal and abnormal sensorimotor development, and basic principles and techniques of facilitating responses desired in the performance of exercise.

409 Physical Therapy Evaluation Procedures II. Semester course; 43 total lecture and 25 total laboratory hours. 3 credits. Basic physical principles related to electricity and electronics are reviewed. Lectures pertain to physical and physiological effects of the low frequency currents and their therapeutic indications and contraindications. In laboratory practice, particular emphasis is placed on diagnostic use of these electrical currents.

411-412 Clinical Science II. Continuous course; 119 total lecture and 7 total laboratory hours. 8 credits. This course is designed to integrate the pathology of medical conditions with physical therapy procedures. Topics include orthopedic problems, respiratory disorders, neurological conditions, burns, transplants, geriatrics, prosthetics, and orthotics.

416 Physical Therapy Management. Semester course; 20 total lecture hours. 2 credits. Lectures and discussions will provide information concerning the physical therapist's responsibility in the management of a physical therapy department. Areas of discussion include ethical principles, financial considerations, concepts of supervision, principles of hospital administration, and socioeconomic aspects of health care services.

493-494 Clinical Practicum III. Continuous course; 66 clock hours. 2 credits. This course is divided into three parts: (1) Part-time supervised clinical experiences enable the student to apply advanced clinical evaluation and treatment procedures. (2) Seminars provide the student with an opportunity to problem solve clinically related topics. (3) Observational experiences provide the student with an opportunity to pursue clinically related interests independently.

495-496 Clinical Practicum IV. Continuous course; 640 clock hours. 4 credits. This course consists of two eight-week full-time clinical affiliations. Each student is assigned to two different clinical settings which provide an opportunity for the student to gradually assume increasing responsibility for the total care of patients.

GRADUATE COURSES (PHT)

601 Electromyographic Kinesiology. Semester course; 2 lecture and 2 laboratory hours. 3 credits. The emphasis of this course is on the theoretical and practical aspects

of the use of electromyography as a tool to observe human movement, normal and pathologic. The student will have the opportunity to consider the electronic, physiologic, and anatomic principles related to the appropriate selection of electromyographic techniques for the study of movement. Particular emphasis will be placed on data reduction methods and interpretation of data. The student will develop beginning skills in performing the techniques necessary for recording parameters involved in movement.

602 Biomechanics. Semester course; 2 lecture and 2 laboratory hours. 3 credits. This course concerns the study of the effects of forces upon normal and pathologic human form and movement. Classroom and laboratory sessions are designed to guide the student in the use of the measurement techniques necessary to form a detailed picture of moving man viewed as a mechanical system. Particular emphasis is placed on the techniques of modeling, cinematography, and electrogoniometry.

605 Foundations for Pathokinesiology. Semester course; 3-4 lecture hours. 3-4 credits. A study of the principles that form a foundation for pathokinesiology and therapeutic kinesiology. Integration of principles of human development and motor behavior with emphasis on abnormal motor behavior and its remediation will be presented.

606 Therapeutic Kinesiology. Semester course; 1-3 lecture and 3 clinical hours. 2-4 credits. A study of motor behavior in both normal and pathological conditions. Reading and discussion of the basic literature of current neurophysiological approaches to therapeutic exercise and an integration of these concepts into a comprehensive model of human movement.

607 Principles of Clinical Examination in Orthopedic Physical Therapy. Semester course; 2 laboratory hours. 1 credit. May be repeated for a maximum of 2 credits. Principles and techniques for evaluating joint and soft tissue injuries and disabilities with an emphasis on history taking, the Maitland Physical Format and accessory motion testing.

608 Principles of Orthopedic Physical Therapy. Semester course; 2 lecture hours. 2 credits. A detailed examination of the basic principles and rationale for physical therapy treatment approaches to orthopedic problems. Principles of mobilization are emphasized.

611 Research Process. Semester course; 2 lecture hours. 2 credits. Readings, discussions, and reports on the current status of the professional literature and the validation of clinical practice, clinical administration, and professional education. A model for professional development, the role of research in the validation process, and the basics of research design are presented non-mathematically. (Required of all students unless excused by the faculty).

690 Physical Therapy Seminar. Semester course; 1 lecture hour. 1 credit. Reports on current problems and issues in the field of physical therapy. May be repeated for a maximum of four credits; required for two semesters.

691 Special Topics in Physical Therapy. Semester course; 1-4 credits. Guided independent study of

specific topics not discussed in other courses or discussed in less detail in other courses. Student's topics of desired study must be identified and approved prior to enrollment.

692 Clinical Specialty Seminar. Semester course; 0-5 credits. Individual reports dealing in depth with the history, current status, and problems in a given area of clinical specialization. It is anticipated that the student will identify several potential thesis topics in the course of preparing these reports.

693 Clinical Specialty Practicum. Semester course; 60 clock hours. 1-9 credits. Prerequisite: appropriate courses in sciences basic to area of specialization. One semester hour's credit per 60 clinical hours. Concentrated clinical experience in the student's chosen area of specialization under the guidance of an approved preceptor.

798 Research in Physical Therapy. Continuous course; 1-15 credits. Research in preparation for the master's degree thesis.

Department of Health Administration

Education in health administration at the Medical College of Virginia began in 1949 with the establishment of a graduate curriculum in hospital administration. Early graduates received a certificate; the M.H.A. degree was awarded beginning in 1955.

These early efforts grew and developed into the Department of Health Administration, established in 1972. The department now includes four major programs: (1) M.H.A. in health administration; (2) Ph.D. in health services organization and research; (3) B.S. in health care management; and (4) M.S. in nursing administration which is offered by the School of Nursing. In addition to these educational programs, the Department of Health Administration includes a growing research program and is involved in a wide range of public service activities including continuing studies for health services administrators and other health professionals.

DEPARTMENTAL PURPOSE AND FUNCTIONS

The overall purpose of the Department of Health Administration is to provide educational programs and services related to the organization and administration of health services. In achieving that purpose, the

department's principal functions are to provide high-quality education leading to careers in the administration of health care institutions, agencies, and systems and to provide advanced training and education for persons who will teach, plan, evaluate, and investigate health care policies and medical care systems. Corollary functions are to provide assistance and other services for community organizations and to conduct health services and health policy research.

FACILITIES

The Department of Health Administration's masters and undergraduate programs are located in Randolph-Minor Annex, an historic building located on the corner of College and Broad Streets on the MCV Campus. The department's doctoral program and its Learning Research Laboratory are located on the fifth floor of the Nursing Education Building.

The Medical College of Virginia Hospitals, one of the largest teaching hospitals in the nation, and MCV's other clinical facilities are readily accessible to the department's students and faculty. In addition, the department has clinical affiliations and close working relationships with a large number of health care organizations and agencies in Virginia and throughout the eastern part of the United States. These organizations and agencies are used extensively as clinical facilities in the department's educational programs.

ENDOWED AWARDS, LECTURESHIPS, AND PROFESSORSHIPS

The **Robert Hudgens Memorial Award** was established and endowed by the department's alumni association in cooperation with the American College of Hospital Administrators (ACHA). The Hudgens Award is presented annually to the person selected by a special ACHA committee as the most outstanding young hospital administrator in the United States. It is presented at the ACHA's Annual Congress.

The **Charles P. Cardwell Memorial Lectureship Series** was inaugurated and endowed by the department's alumni. It is held in conjunction with the ACHA's Annual Congress. The series is coordinated by a

standing committee of the department's alumni association.

Endowed professorships have been established in honor of individuals who have played vital roles in the development of the Medical College of Virginia. The **Arthur Graham Glasgow Professorship of Hospital Administration** was established in 1957 in honor of Dr. Glasgow who had shown such a vital interest in hospitals.

The **Herman L. Mullins Award** is presented annually for the most outstanding thesis or management study completed by a graduate student in health services administration. This award was established by the MHA Class of 1976 through the Health Administration Alumni Association in recognition of the contributions of Herman L. Mullins as a teacher, advisor, and friend of the student.

PROGRAMS

1. The master's degree in health administration (M.H.A.) is designed to prepare individuals for administrative roles ultimately leading to top-level executive positions in complex health institutions. The curriculum combines emphases in strategic and operational management, using both the didactic and residency teaching environments. The program requires 54 hours of course work and a residency which varies according to the student's prior experience and education.
2. Ph.D. in Health Services Organization and Research is designed to train students to apply research methods and scientific knowledge drawn from behavioral and managerial sciences to the study of health institutions and systems. The program is designed to prepare individuals for positions as faculty in health-related graduate and undergraduate programs, researchers, policy analysts and top-level staff in complex health organizations. The Ph.D. degree is awarded upon successful completion of 60 semester hours of course work, preliminary examinations in the four major areas of the curriculum, and a doctoral dissertation.

3. Program in Health Care Management leads to a baccalaureate degree in one of two areas of concentration: long-term care and health care management. The curriculum is a two-year upper-division curriculum requiring 60 semester hours of course work and other prerequisites and qualifications. Details follow below.

4. Master of Science program in nursing administration which is a cooperative program between the department and the School of Nursing with the degree awarded by the School of Nursing.

Further information on graduate programs, including specific admissions requirements and program descriptions, may be found in the *Virginia Commonwealth University Graduate Bulletin*.

PROGRAM IN LONG-TERM AND HEALTH CARE MANAGEMENT

PURPOSES

The program in long term and health care management was established in 1973. Initially, the program focused on long-term care only. Today, two areas of concentration are available. In addition to long-term care administration students may now elect health care management as an area for concentration.

The purpose of the concentration in long-term care administration is to meet management needs in long-term care facilities and organizations. Health care management is a more general field of study and prepares students for careers in health management appropriate to the baccalaureate level of education.

Students with majors in other disciplines such as accounting and industrial engineering may earn a minor in health care organization and management by electing 12 credit hours from a specified list of courses offered within the program in long-term and health care management. These students are thus prepared to meet growing needs in various functional areas within health care institutions.

Undergraduate students in other health professions may also take certain courses within the program in order to increase their

knowledge and skills in the management of health services.

The B.S. degree in health care management with a concentration in long-term care or health care management is a two-year, upper-division curriculum offered by the Department of Health Administration, School of Allied Health Professions, in cooperation with the School of Business. Applicants are accepted into this program after completing a minimum of 60 semester hours of undergraduate work and meeting established prerequisites and qualifications.

It is anticipated that most candidates for the B.S. degree in health care management will be full-time students. However, part-time students will be accepted. The part-time degree program is intended primarily for persons who are already employed in the health industry. The admissions standards and degree requirements for part-time degree candidates are the same as those for full-time degree candidates.

Students who meet specified prerequisites and standards are accepted into the program on a transfer basis from other schools within Virginia Commonwealth University and from other accredited colleges and universities including community colleges.

ADMISSION REQUIREMENTS

The minimum qualifications for admission as a part-time or full-time B.S. degree candidate are as follows:

1. The applicant must present satisfactory evidence of personal achievement, motivation, scholarship, intellectual ability, and professional promise.
2. The applicant must have attained a junior standing or have completed a minimum of 60 semester hours from schools within Virginia Commonwealth University and/or from other accredited colleges and universities including community colleges. (If a student possesses an R.N. diploma awarded by a two- or three-year nurse training program, is currently licensed as a registered nurse, and has at least three years experience in a responsible administrative position in a health care organization immediately prior to application, the program may award up

to 45 semester hours of credit toward the B.S. degree.)

3. A significant portion of the minimum of 60 semester hours of credit to have been completed prior to admission into the program should be made up of general foundation courses. The foundation course credits should be distributed as follows:

<i>Courses</i>	<i>Credits</i>
English.....	6
Psychology.....	3
History.....	3
Government.....	3
Humanities.....	6
Mathematics.....	3
Science.....	6
Total	30

Should an applicant lack some of the foundation courses prior to entering the program, these courses must be taken during the junior and senior years in order to graduate.

4. In order to be considered, the applicant must have a minimum 2.0 grade-point average on a 4.0 scale.
5. The applicant must have completed at least three semester hours in accounting and three semester hours in economics. ECO 201, Principles of Economics, or ECO 203, Introduction to Economics, and BUS 203, Introduction to Accounting I available at VCU are the prototypes.
6. Foreign applicants must meet all the regular admission requirements and take the Test of English as a Foreign Language, with a minimum TOEFL score of 550.

In admitting students to the program in long-term and health care management, the following guidelines are also used by the faculty:

1. Student admission into the program may fall under one of the following categories: acceptance or conditional acceptance. Conditional acceptance is granted to those who are in the process of completing prerequisite courses, 60 semester hours of credit, and/or foundation courses. It is also applied to those students whose GPA falls between 2.0 and 2.49 on a 4.0 scale.
2. Active support will be given the expan-

sion of education opportunities for qualified minorities.

3. Virginia Commonwealth University is a state-aided institution, and therefore, admission preference is given to applicants with equal qualifications who are residents of Virginia.
4. Preference may also be given to those individuals employed in the health care industry who have a desire to become degree candidates, either on a part-time or full-time basis.
5. Part-time degree candidates are required to complete all requirements for the B.S. degree within five years from the date of initial acceptance into the program

Further information concerning admissions may be obtained by writing to the Office of Admissions, Medical College of Virginia, Virginia Commonwealth University, Box 632, MCV Station, Richmond, VA 23298 or Department of Health Administration, Medical College of Virginia, Virginia Commonwealth University, Box 203, MCV Station, Richmond, VA 23298.

CURRICULUM

For the baccalaureate degree, students from both concentrations must satisfactorily complete 27 hours of required courses within a core curriculum offered by the Department of Health Administration and the School of Business. In addition to the core curriculum, students in each concentration must complete specialized courses in preparation for each of the two disciplines.

Core Courses (27 credit hours)

BUS 321	Organization and Management I
BUS 204	Introduction to Accounting II (BUS 203 prerequisite)
BUS 311	Financial Management (BUS 203, 204, prerequisites)
BUS 260	Information Systems Concepts
HCM 300	Health Care Organization and Services
HCM 301	Aspects of Illness and Disability
HCM 404	Financial Management in Health Care Facilities (BUS 203, 204, 311 prerequisites)
HCM 406	Personnel Management in Health Care Facilities
HCM 407	Health Planning and the Political Process

Courses for Concentration in Long-term Care Administration (21 credit hours)

HCM 302	Structure and Functions of Long-term Care Organizations
HCM 303	Human Dimensions of Long-term Institutional Care (HCM 302 prerequisite)
HCM 493	Practicum in Long-term Care (HCM 302, 303 prerequisites)
BUS 323	Legal Environment of Business
HCM 405	Long-term Care and Medical Law (BUS 323 prerequisite)
HCM 409	Management in Long-term Care Facilities (BUS 321 prerequisite)
GTU 510	Introduction to Gerontology

HCM 493 Practicum in Long-term Care Administration is an integral part of the course work in the Program in Long-term and Health Care Management. The basic purpose of field work is to provide the student with the opportunity to apply and develop administrative knowledge and skill through a period of applied educational experience. The field work is directly supervised by faculty members of the Department of Health Administration and administrators designated as preceptors within institutions or agencies. This experiential component of the program usually falls in the summer between the junior and senior years, and it consists of 480 hours of work on the site.

Courses for Concentration in Health Care Management (18 credits)

HCM 306	Legal and Regulatory Controls in the Health Field
HCM 408	Management in Health Care Facilities (BUS 321, prerequisite)
HCM 410	Seminar in Health Care Management

Students must elect three of the following courses as part of the concentration:

HCM 302	Structure and Functions of Long-term Care Organizations
HCM 303	Human Dimensions of Long-term Institutional Care (HCM 302 prerequisite)
BUS 301	Business Statistics (BUS 111, 112, or MAT 111, 112 prerequisites)
BUS 308	Introduction to Marketing (ECO 201 prerequisite)
BUS 322	Organization and Management II
BUS 325	Business Communications
ENG/	
BUS 327	Business and Technical Report Writing
CSE 330	Safety Codes, Standards and Regulation
MAC 323	Public Relations (MAC 203 prerequisite)

POS 310	The National Policy Process
POS 331	Public Administration
SOC 445	Medical Sociology (SOC 101 prerequisite)
SOC 446	Sociology of Mental Health and Illness (SOC 101 prerequisite)

The remainder of the 126 hours required for the Bachelor of Science degree is satisfied by taking elective courses selected on an individual basis by the student with the assistance of a faculty advisor. Eighteen credit hours of electives are available for long-term care majors, and 21 hours are allowed for health care management majors, provided that 60 credits have been accumulated prior to entrance to the program.

Curriculum for Minor in Health Care Organization and Management

In order to complete a minor in health care organization and management, students must complete 12 credit hours (four courses) within approved guidelines. The course work should be selected to complement instruction in the major area of study, enhancing a student's capability to work effectively in health care organizations. The list of courses from which students elect four are

HCM 300	Health Care Organization and Services	3
HCM 301	Aspects of Illness and Disability	3
HCM 306	Legal and Regulatory Controls in the Health Field	3
HCM 404	Financial Management in Health Care Facilities (BUS 203, 204, 311 prerequisites)	3
HCM 406	Personnel Management in Health Care Facilities	3
HCM 407	Health Planning and the Political Process	3
HCM 408	Management in Health Care Facilities (BUS 321 prerequisite)	3

REQUIREMENTS FOR GRADUATION

To qualify for the Bachelor of Science in long-term care administration or health care management, the student must meet the following requirements: (1) achieve a grade-point average of 2.5 on a 4.0 scale for all course work while enrolled in the program; (2) satisfactorily complete all requirements of the field experience and the required course work described above; and (3) demonstrate to the satisfaction of the faculty sufficient maturity and development to constitute readiness for a career in the health care system; and (4) pay all fees.

ACADEMIC POLICIES AND REGULATIONS

Academic policies and regulations for the graduate program in health services administration and the program in long-term and health care management are set forth in separate documents published by the Department of Health Administration. These departmental documents, as well as publications that provide university-wide policies and regulations, may be obtained by the applicant at the time of the interview or by written request.

PROGRAM OF CONTINUING EDUCATION

The Department of Health Administration's involvement in continuing education began in the early 1970s with the assistance of a grant from the W. K. Kellogg Foundation that included continuing education as a principal component. The basic purpose of the department's program of continuing education is to provide educational services for persons who have administrative responsibilities in hospitals, medical centers, multi-unit systems, nursing homes, and other health care organizations and agencies.

FACULTY

Professors: Barker; Cullen; Norville; Wan; Wiecking
Associate Professors: Luke; Modrow; Shukla; Witherspoon
Assistant Professors: Briendel; Harkins; Heck; Jensen; Mark; Rossiter
Instructor: Maher
Adjunct Associate Professors: Hornbrook; Lash
Adjunct Assistant Professor: Terbush
Adjunct Instructors: Fraley; Hickman; Schrock
Lecturers: Call; Cauble; Heck, N.; Laslie; Maier; Marsh; Sartoris

COURSES OF INSTRUCTION

Undergraduate—Health Care Management (HCM)

300 Health Care Organization Services: Semester course; 3 lecture hours. 3 credits. Examines the structure and function of health care organizations with emphasis on long-term care facilities. Examines the role and responsibilities of health care professions and occupations in these organizations. Considers the organizational characteristics of the health care industry.

301 Aspects of Illness and Disability. Semester course; 3 lecture hours. 3 credits. An introduction to the

physiological and psychological aspects of illness and disability. Identifies factors that affect health and explores family, societal, and patient attitudes about illness and disability.

302 Structure and Functions of Long-term Care Institutions. Semester course; 3 lecture hours. 3 credits. Examines all aspects of long-term care. Particular focus on facilities and their internal operations. Considers professional personnel, major services involved as well as the external community agencies which influence long-term care all within the framework of administration.

303 Human Dimensions of Long-term Institutional Care. Semester course; 3 lecture hours. 3 credits. Examines the sociopsychological aspects of long-term care from the perspective of the administrator's philosophy, policies, and practices. Considers philosophical, ethical, and social research relevant to long-term care.

306 Legal and Regulatory Controls in the Health Industry. Semester course; 3 lecture hours. 3 credits. Prerequisite: Legal Environment. Explores the nature of government involvement and that of various non-governmental agencies in health care delivery through legislation, regulation, and financial controls. Examines the types of controls and how they came into being; how controls are administered; sanctions involved; and the impact of controls in the health industry.

392 Independent Study. Continuous course. 1-4 credits. Individual topics arranged with instructor and student.

404 Financial Management in Health Care Facilities. Semester course; 3 lecture hours. 3 credits. Prerequisite: Basic Accounting, Cost Accounting, Principles of Finance. The application of cost accounting to a health care facility; techniques of budgeting and cost controls; use of fiscal data in planning, decisions, and evaluation of care.

405 Long-term Care and Medical Law. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 323 or equivalent. Acquaints students with the legal and political issues in long-term care administration. Focuses on the legal system, its components and processes, as it impacts on the long-term health care industry.

406 Personnel Management in Health Care Facilities. Semester course; 3 lecture hours. 3 credits. Prerequisite: Personnel Management. Focuses on the major elements of personnel management and labor relations that characterize the health care facility. Includes analyses of employment practices, education and training, health and safety programs, and employee relations with emphasis on problems unique to health care facilities.

407 Health Planning and the Political Process. Semester course; 3 lecture hours. 3 credits. Prerequisite: Statistics. Provides the prospective long-term care facility manager with requisite knowledge and understanding of the program-planning process and the facility planning and construction process. Also deals with relevant planning laws and regulations as well as the community health planning process.

408 Management in Health Care Facilities. Semester course; 3 lecture hours. 3 credits. Prerequisite: Fun-

damentals of Management. Study of recent developments in management theory and practice to develop a foundation of human, technical, and conceptual skills necessary for successful performance as a health care manager. The management process is examined with the focus of all course activities being management in the health facility.

409 Management in Long-term Care Facilities. Semester course; 3 lecture hours. 3 credits. Emphasis on the professional role of the long-term care administrator in providing for the health and social needs of the elderly and chronically ill. Applied skills in addressing the technical, human, and conceptual problems unique to LTC are developed through cases and exercises in long-term care administration.

410 Seminar in Health Care Management. Semester course; 3 lecture hours. 3 credits. Integrative course in health care management. Focuses on development of management skills through applied cases and exercises including some field exercises.

493 Practicum in Long-term Care Administration. Summer field work; 3 applied hours. 3 credits. Readiness determined by faculty. Required of all senior majors in long-term care concentration. Assigned work under the supervision of a field preceptor and faculty advisor for four days each week. One day per week is devoted to seminars with assigned reports and problem-oriented discussions.

GRADUATE COURSES IN HEALTH ADMINISTRATION (HAD)

500 Health and Medical Care Organization. Semester course; 3 lecture hours. 3 credits. Intended for students seeking degrees in disciplines other than health care administration and for special students who wish to learn about the health industry and health care organizations. Provides an overview of the health industry. Examines the organization and operations of major health care organizations with particular emphasis on hospitals.

502 Management in Health Care Facilities. Semester course; 3 lecture hours. 3 credits. Study of recent developments in management theory and practice in order to develop a foundation of technical, human, and conceptual skills necessary for successful performance as a health care manager. Focus of course learning activities is on management of departments and services in health care institutions, especially hospitals.

602 Health Care Organization and Services. Semester course; 3 lecture hours. 3 credits. Examines the structure and functions of the American health care industry, the concepts and processes of health and illness, the institutional and individual providers of health services, and related concepts.

606 Financial Management in Health Institutions. Semester course; 3 lecture hours. 3 credits. Prerequisite: Financial Accounting. A theoretical and practical study of organization and functions of health care financial administration. Emphases are on institutional fiscal policies, accounting concepts and practices, internal and

external controls, financial statistical reporting, and the use of financial data as management tools.

607 Advanced Financial Management in Health Institutions. Semester course; 3 lecture hours. 3 credits. Prerequisite: HAD 606. Advanced practices of health care financial management. Emphasis on techniques to aid in financial decision making. Areas of investigation and study include analysis of financial statements, cost allocations, reimbursements, rate setting, budgeting, and capital financing.

608 Seminar in Health Care Finance. Semester course; 3 lecture hours. 3 credits. Prerequisite: HAD 607. Advanced studies of financial issues and the application of analytic tools in case studies and exercises. Designed to enhance and strengthen the knowledge and skills provided in the graduate program's foundation and required courses in accounting and finance.

609 Health Systems Analysis and Evaluation I. Semester course; 3 lecture hours. 3 credits. Prerequisite: upper-division course in statistics. Introduction to principles and methods employed in evaluation research and program evaluation as these relate to health services. Focus will be conceptualization, design and operation procedures used in program evaluation.

610 Health Systems Analysis and Evaluation II. Semester course; 3 lecture hours. 3 credits. Prerequisite: HAD 609. Applications of traditional industrial engineering techniques in health care institutions. Applications of operations research techniques to health care planning, control and decision making including deterministic, stochastic, and decision analysis models and their use in health services administration.

611 Hospital and Medical Law. Semester course; 3 lecture hours. 3 credits. Examines basic principles and practices of law affecting hospitals and medical practice: the legal aspects of patient care and treatment, and medical services, and other hospital-patient related functions.

612 Information and Management Systems in Health Care Institutions. Semester course; 3 lecture hours. 3 credits. Prerequisites: HAD 609 and 610. Analysis of current information and management systems including: manpower planning and productivity; financial planning and monitoring; quality assurance; staffing and scheduling; administrative information systems and patient care systems. Evaluation of alternative uses of computer technology in health care. Uses of national and organizational data bases.

614 Health Planning and Policy. Semester course; 3 lecture hours. 3 credits. Prerequisite: HAD 604. Examines the planning process in the context of both the community and the institution. Considers the essential components of planning and the development of a sound structure for planning. Examines the legal, regulatory, economic, and human factors that influence the planning process.

615 Health Care Politics and Policy. Semester course; 3 lecture hours. 3 credits. Examines the political process with particular emphasis on the impact of politics on health care. Focuses on current political issues in the health field, examining conflicts and anticipating effects on the health system.

616 Seminar in Applied Health Planning. Semester course; 3 lecture hours. 3 credits. Prerequisite: HAD 614. Provides students with opportunities to apply planning methodology, including problem definition, research design, information gathering and evaluation to actual health issues and problems.

617 Health Facility Design and Construction. Semester course; 3 lecture hours. 3 credits. Prerequisite: HAD 614. Examines the essential elements and process of designing and constructing health facilities.

623/Gerontology 623 Psychological Aspects of Illness and Disability. Semester course; 3 lecture hours. 3 credits. An introduction to the theories and research in the field of health psychology. Topics include the application of psychological principles to the promotion and maintenance of health; prevention and treatment of illness; relationship of stress and illness; patient/physician communication; stress and the health care provider; treatment compliance; changing self-destructive health behaviors; institutions and health care; and care for the terminally ill.

624 Health Economics. Semester course; 3 lecture hours. 3 credits. Develops an understanding of (1) economics as a managerial tool in making choices or decisions that will provide for an optimum allocation of limited health care resources; and (2) economics as a way of thinking about and approaching issues of public policy in financing and organizing health and medical services. Individual research on crucial controversial issues in the health field.

626 Comparative Health Systems. Semester course; 3 lecture hours. 3 credits. Examines the structure and functions of health care systems in nations other than the United States.

632 Personnel and Labor Relations in Health Institutions. Semester course; 3 lecture hours. 3 credits. Examines the procurement, development, and maintenance of an effective work force. An analysis of staff development; health and safety; wage and salary administration; employee services; and labor relations.

634 Case Studies in Assuring the Quality of Health Care. Semester course; 3 lecture hours. 3 credits. Case studies that illustrate the relationship of administrative aims, strategies, tasks and environment to the quality of health care. Examines the effects of health management, planning, and policy decisions on the delivery of health services.

636 Administration of Mental Health Programs, Institutions, and Systems. Semester course; 3 lecture hours. 3 credits. Analysis of the current state of administration of mental health programs, institutions, and systems. Emphasis is on understanding both public and private mental health systems including goals, structure, functions, and financing. Also focuses on patient care concepts including diagnostic and treatment modalities and professional roles and standards. Regulations and legal aspects of mental health are considered.

638 Administration of Long-term Care Facilities and Programs. Semester course; 3 lecture hours. 3 credits. Focuses on unique knowledge and skills considered essential to effect long-term care administration. Em-

phasis is on the professional role of the long-term care administrator in providing for the health and social needs of the chronically ill and elderly. Applied skills in addressing the technical, human, and conceptual problems unique to LTC are addressed through cases and field exercises.

645 Structure and Functions of Health Institutions. Semester course; 3 lecture hours. 3 credits. Analysis of organizational and management theories applicable to health institutions. Considers organizational structure, technology, and the environment of health care institutions. Focuses on design and effectiveness and on planning and managing change in health care institutions.

646 Organizational Behavior in Health Institutions. Semester course; 3 lecture hours. 3 credits. Prerequisite: HAD 602 or permission of instructor. Focuses on the major concepts, principles, and theories of management and behavioral sciences as they relate to human behavior in health care institutions and agencies.

647 Administration in Health Institutions. Semester course; 3 lecture hours. 3 credits. Prerequisites HAD 603 and 646. Analysis of the current state of management study and practice with the objective of achieving a balanced development of both knowledge and skills in solving the human problems of administration in health institutions. The managerial process is critically examined with emphasis on individual behavior and development, intergroup behavior, and behavior in the total organization.

648 Strategic Management in Health Care Organizations. Semester course; 3 lecture hours. 3 credits. Prerequisites: HAD 614 and 647. Integrative seminar on strategic decision making in health care organizations. Considers the concepts and alternative models of strategic management, the strategic management process, and the evaluation of strategic decisions.

690 Departmental Research Seminar. Semester course; variable credit. Research seminar that focuses on a research design and methods organized under a single topic or a series of related topics in health services research. Applied research training for master's-level students

691 Special Topics in Health Services Organization and Research. Semester course; 3 lecture hours. 3 credits. Prerequisite: two semesters of graduate work and permission of instructor. A seminar on the current state of knowledge and research within specialized areas of concern related to health services organization, planning, and assessment.

692 Independent Study in Health Services Administration. Variable credit. Offered in all semesters for students to investigate and study topics of major interests.

693, 694, 695 Practicum in Health Services Administration, I, II, III. 2 credits each. Prerequisite: admission to the administrative residency. Examination of contemporary problems and issues in the organization, administration, and evaluation of health services. A principal focus is the application of alternative approaches to administrative problem solving. Special emphasis is

placed on understanding of and appreciation for the internal and external factors that influence decision making in health care organization.

697 Directed Research. Semester course; variable credit. Special course offered on demand for one or more students who will design and implement an applied research project in the field setting under the guidance of a faculty sponsor. Focus of the course will be on the application of research methods to policy or operational problems of health care institutions.

701 Health Organization Design and Assessment. Semester course; 3 lecture hours. 3 credits. Prerequisite: HAD 646. Analysis of medical care organizations at both micro and macro levels. Critical review of empirical research in organizational analysis and design. Identifies measurement issues related to the quality of care and to formulation of evaluative research on health services programs.

702 Health Care Financing and Delivery Systems. Semester course; 3 lecture hours. 3 credits. Prerequisite: HAD 701. Critical review and evaluation of major innovations in organization, delivery, and financing of health care services. Selected topics may include cost function analysis of alternative health care delivery systems and consideration of alternative public financing of health care.

703 Strategies for Planned Change in the Health Field. Semester course; 3 lecture hours. 3 credits. Prerequisites: HAD 609 and 701. Critical review and analysis of principles and theories of planned change. Planning methodology is introduced that covers methods of health planning, program planning, and community diagnosis. The relationships between planning methods and implementation strategies are examined.

711 Long-term Care Research. Semester course; 3 lecture hours. 3 credits. Prerequisites: HAD 609 or permission of instructor. Analysis of factors contributing to the problem in the delivery of services including ambulatory care and long-term care for the chronically ill and the aged. Emphasis is placed on the application of analytic designs and evaluation research to identify alternatives for institutionalization and the health care outcomes.

731 Advanced Health Economic Analysis. Semester course; 3 lecture hours. 3 credits. Prerequisites: HAD 604, 609, 610, or permission of instructor. Study of analytical methods and their applications to health economic problems. Topics include cost-benefit and cost-effectiveness analysis, Linear, integer and dynamic techniques for economic analysis.

732 Econometrics Modeling in the Health Care Industry. Semester course; 3 lecture hours. 3 credits. Prerequisite: HAD 731 or permission of instructor. Application of statistical modeling techniques including utility models, Bayesian analyses, multiple regression analyses, time-series and cross-section analyses, and forecasting models and problems of the health industry. Techniques will be applied to such areas as demand for health services, supply of medical care, allocation of health care resources, hospital economics, and equity/efficiency of health manpower.

741 Health Industry Information Systems: Design and Evaluation. Semester course; 3 lecture hours. 3 credits. Prerequisites: HAD 609 and 610. Principles and methods of health services information systems design and evaluation. Considers characteristics, requirements, and development of information networks for planning, administration, operation, and health services research. Cost/benefit evaluation of management information systems in the health care industry are stressed.

742 Simulation Modeling in the Health Field. Semester course; 3 lecture hours. 3 credits. Prerequisites: HAD 741 and one computer course. Analysis of complex deterministic and stochastic models and their applicability to health services research. Focus is on formulation of simulation models for planning and policy analysis of macro health delivery systems.

743 Health Manpower Planning and Productivity and Analysis. Semester course; 3 lecture hours. 3 credits. Prerequisites: HAD 701, 702, and 761. Examination of various health manpower planning models and assessment of the alternative approaches for improving the productivity of medical and allied health care manpower. Emphasis is on health manpower study design, planning methods, productivity analysis and utilization of manpower, and projection of manpower needs.

760 Quantitative Analysis of Health Care Data. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 624 or permission of instructor. Research course emphasizing computer application and statistical analyses of health care data generated from secondary sources.

761 Advanced Epidemiological Principles and Methods. Semester course; 3 lecture hours. 3 credits. Prerequisites: HAD 609, BUS 624, or permission of instructor. Introduction of advanced epidemiological principles and methods. Topics will include causal inferences from epidemiological studies, methods of analysis of epidemiological data, sociopathogenic factors in mortality and morbidity of specific chronic diseases, and designs of prospective or retrospective studies using a community as an epidemiological laboratory. Emphasis will be given to application of epidemiological methods to health planning, policy analysis, health services research, and program evaluation.

762 Health Services Research Methods. Semester course; 3 lecture hours. 3 credits. Prerequisites: HAD 609, 761, or permission of instructor. Application of multivariate statistical analysis and evaluation research methods to health services research. Emphasis is placed on the use of advanced statistical methods and designs to analyze panel data in the health field.

791 Directed Independent Study. Semester course; variable credit. Prerequisite: permission of instructor. Research leading to a publication conducted under the guidance of a faculty member. Special studies or reading may also be arranged.

792 Independent Study in Health Services Organization and Research. Semester course; variable credit. Special study or research leading to a publication. Conducted under the guidance of a faculty sponsor.

793, 794, 795, and 796 Research Practicum. Semester course; variable credit. Supervised investigation of

selected problems in health services research. Field research open only to second-year doctoral students who have completed the preliminary examination.

798 Thesis I. 3 credits. Independent research to provide the opportunity for the student to select, organize, and report the results of an investigation in a field of major interest.

799 Thesis II. 2 credits. Prerequisite: HAD 798. Continuation of research study begun in HAD 798.

898, 899 Doctoral Dissertation in Health Services Research. Semester course; variable credit. Prerequisite: completion of required course work and comprehensive examination. Dissertation research under direction of faculty advisor. A minimum of nine semester hours required for Ph.D. degree.

For descriptions of courses in other schools and departments, see the current *Virginia Commonwealth University Graduate Bulletin* and/or *Virginia Commonwealth University Undergraduate Bulletin*.

Department of Nurse Anesthesia

HISTORY

The Department of Nurse Anesthesia was organized in 1969 and was the first new teaching program to be implemented in the newly organized School of Allied Health Professions at the Medical College of Virginia of Virginia Commonwealth University. The Master of Science degree in nurse anesthesia which was initiated in 1979 is the first such offering through a School of Allied Health Professions in the United States. The faculty believes that the master's degree level of education is fundamental to preparing diversified practitioners, future teachers, coordinators, and directors of nurse anesthesia educational programs. A postgraduate Certified Registered Nurse Anesthetist (CRNA) Program has been offered since 1980.

PROGRAMS

Two courses of study are provided:

1. Basic Professional Degree is designed for college graduates with current nursing licensure and a year's experience. The program is 24 months in length and includes didactic, clinical, and research components.
2. Postgraduate CRNA Program provides the postgraduate certified registered

nurse anesthetist with a greater depth of study in the basic sciences and anesthesiology as well as skills in educational instruction, research, and consultation. The program is three semesters (12 months) in length.

Further information, including specific admissions requirements, curriculum, and course descriptions, may be found in the *Virginia Commonwealth University Graduate Bulletin*.

FACULTY

Professors: Watson (Chairman); Keenan (Medical Advisor)

Assistant Professors: Beeston; Ciresi; Shalenko

Instructors: Bowman, T.; Embrey; Hahn; Hinchee;

Jones, B.; Keohane; Magennis; McDougle; Vining

Clinical Instructors: Hale; Keenan, W.

COURSES OF INSTRUCTION (NUA)

501 Fundamentals of Anesthesia Practice. Semester course; 2 lecture, 5 clinical, and 1 laboratory hour. 3 credits. This course introduces the beginning practitioner to those concepts necessary to plan and execute an anesthetic individually planned for a patient which ensures a margin of patient safety while meeting surgical requirements. Includes selected concepts of respiratory therapy which interface with anesthesia. (Program includes a 4-week clinical affiliation in respiratory therapy.)

531 Regional Anesthesia. Semester course; 2 lecture hours. 2 credits. A study of the theoretical and practical considerations involved in the administration and management of regional analgesia: Neuroanatomy, neurophysiology, neuropharmacology, indications, contraindications, techniques, complications, and their prevention related to selected blocks. (Clinical anesthesia practicum will include practical experience in the administration and/or management of selected blocks.)

533 Pathophysiology. Semester course; 3 lecture hours. 3 credits. Pathophysiology of the neuromuscular, cardiovascular, respiratory, excretory, and endocrine systems; infectious diseases, gastrointestinal disorders; nutritional disorders; connective tissue diseases; muscle, skin, bone disorders; and environmental and behavioral disorders. The pathophysiology will be studied in relationship to anesthetic considerations.

535 Historical Development of Anesthesia. Semester course; 1 lecture hour. 1 credit. A study of the history of anesthesia, to include the evolutionary stages in the development of anesthesia and the professional organizations; the American Association of Nurse Anesthetists and the American Society of Anesthesiologists.

551 Advanced Practice and Principles of Anesthesia. Semester course; 4 lecture hours. 4 credits. This course

delineates those practices and techniques of anesthesia management considered as situation-specific for specialized surgical procedures, diagnostic, or therapeutic procedures; includes the obstetrical, pediatric, and geriatric patient.

553 Biomedical Instrumentation for Nurse Anesthetists. Semester course; 2 lecture hours. 2 credits. A course surveying the essentials of biomedical instrumentation as used in those electronic devices most often encountered by nurse anesthetists; to include a brief descriptive review of the basic laws of electrical circuits and the physical principles of biophysical measurement.

555 Ethical and Legal Aspects of Anesthesia Practice. Semester course; 2 lecture hours. 2 credits. This course includes five areas of professional focus: psychosocial, ethics, legal aspects, organization and management of an anesthesia department, and basic life support (CPR) for health professionals.

593 Clinical Practicum. Semester course; 9 clinical hours. 1 credit. Preoperatively conducts interviews, prepares anesthesia care plans with selection of anesthetic agents and techniques, calculates fluid requirements. Is introduced to clinical area with supervised participation in actual administration of anesthesia. Demonstrates knowledge of equipment and monitors, skills, dexterity, and ability to integrate physiological data in anesthesia management, its termination, and post-anesthetic care.

594 Clinical Practicum. Semester course; 40 clinical hours. 5 credits. Continuation of NUA 593. Demonstrates internalization of theoretical concepts and techniques and application in anesthetic management. Emphasis on assuming greater responsibility for total anesthetic regimen. Progresses to a greater variety and more complex anesthetic managements, to include pm, nights, and weekend duty. Gains experience in emergency and acute trauma surgery.

601 Physical Assessment. Semester course; 3 lecture hours. 3 credits. A didactic and laboratory study of the physical examination to provide the graduate with the capability of performing a screening, pre-anesthesia examination aimed at identifying pathology rather than diagnosing particular disease entities, to include taking an appropriate health history.

692 Clinical Practicum III. Semester course; 3 clinical hours. 4 credits. Continuation of NUA 594. Intensive clinical experience in each of the clinical anesthesia areas. Greater emphasis is placed on development of independent decision making in planning, managing, terminating, and follow-up anesthesia care. Includes rotation of clinical experience to include affiliations at Richmond Memorial, Children's Hospital, St. Lukes (respiratory therapy), and McGuire Veterans Administration Medical Center to gain experience in management of specialized anesthetic considerations, and functioning in a variety of clinical settings in conjunction with certified registered nurse anesthetists and staff attending anesthesiologists. Assesses clinical experience and plans for anesthesia project.

693 Clinical Practicum IV. Semester course; 30 clinical hours. 4 credits. Continuation of NUA 694. Affiliations to specialized areas continue. Beginning to function

with minimum of supervision from certified registered nurse anesthetists and attending staff anesthesiologists. Pursues independent library research and collects clinical data to support anesthesia project.

694 Clinical Practicum V. Semester course; 40 clinical hours. 5 credits. Continuation of NUA 693. Intensive application of all previous clinical experiences to demonstrate development of independent thought and judgment and ability to function with minimum of supervision. Correlates clinical data with anesthesia project in preparation for presentation. Reviews all clinical experiences in preparation for writing qualifying examination of Council on Certification of Nurse Anesthetists. All clinical requirements are completed.

696 Advanced Clinical Practicum. Semester course; 8 clinical hours. 1 credit. Selected clinical anesthesia experiences for the postgraduate certified registered nurse anesthetist (specialty anesthesia and anesthetic techniques). Provides collection of clinical data in support of clinical project/thesis.

698-699 Clinical Thesis I and II. 6 credits. Required of all students, the independent clinical study provides the student the opportunity to select, organize, and report the results of an investigation into some specific area of interest to clinical anesthesiology. The project study will be written in a publishable format.

Program of Medical Record Administration

HISTORY

The Program of Medical Record Administration was opened in 1978 and is the first baccalaureate program in the field of medical record science in Virginia. The first students were admitted in the fall of 1978 and the first degrees (Bachelor of Science in medical record administration) were awarded in May 1980.

The program started as a cooperative venture of the McGuire Veterans Administration Medical Center, the MCV/VCU School of Allied Health Professions, and the School of Business of Virginia Commonwealth University.

PURPOSE

The program was organized to assist in meeting an urgent need for health record professionals in Virginia and the region.

A critical national need and technological advances have made health care a rapidly expanding field with many career opportunities. Hardly anywhere is this need felt more than in medical record administration, which is defined by the American Medical

Association as "the management of health information systems consistent with the medical, administrative, ethical, and legal requirements of the health care delivery system." The improvement and refinement of health record and information systems are required to promote quality medical care and evaluation, and to facilitate education and research.

The medical record administrator is usually the administrative head of the medical record department of a health facility. The administrator plans, coordinates, and administers the patient health information system. This person is charged with these responsibilities:

1. Maintaining complete and accurate records on patients treated.
2. Developing, analyzing, and technically evaluating health records.
3. Developing secondary records such as indices of physicians, diseases treated, and operations performed.
4. Developing and analyzing statistical reports.
5. Supervising departmental workers.
6. Assisting the medical staff in developing methods of evaluating patient care.
7. Assisting hospital personnel in conducting research projects that require abstracting and displaying health data from the medical record.
8. Managing the medical record department and its systems.

PHILOSOPHY

The program is dedicated to the design and maintenance of a sound educational curriculum to prepare practitioners for modern medical record systems in keeping with the dynamic growth of medical knowledge and information technology.

The combination of sound educational principles in the program and practical experiences in modern medical record departments is stressed. Every effort is made to provide shared classes and experiences with students of other related disciplines in the university.

Basic courses taken in accredited programs of medical record technology are accepted in keeping with university regulations. Professional knowledge and experience acquired in practice of the profes-

sion may be validated for credit through assessment and/or proficiency examinations.

OBJECTIVES

1. To educate candidates for roles of responsibility in medical record departments and for other employment opportunities in clinics, insurance companies, and record centers.

2. To provide an educational environment which allows the student to develop the managerial and technical skills consistent with the practice of medical record administration.

3. To provide an educational atmosphere that keeps abreast of the current developments and changes within the field of medical record administration, and to encourage scholarly concern for the pursuit of research and advanced education.

4. To encourage values which will serve as guidelines for ethical practice and deeper awareness of the community and its search for solutions to health problems.

FACILITIES

The Program of Medical Record Administration is housed on the basement floor of the Lyons Building located on North Twelfth Street on the MCV Campus.

Students attend business and health care management courses at the Academic and Medical Campuses of Virginia Commonwealth University.

Clinical practicum is offered in medical record departments of affiliated medical care facilities in Richmond and other locations as needed.

ACCREDITATION

The program is accredited by the Committee on Allied Health Education and Accreditation, American Medical Association, in collaboration with the American Medical Record Association.

Upon satisfactory completion of the program the student is awarded a Bachelor of Science degree in medical record administration by the Virginia Commonwealth University and becomes eligible to take the examination for registration by the American Medical Record Association.

FINANCIAL ASSISTANCE

In addition to the financial assistance sources described in Part I, limited loan funds from the Virginia Medical Record Association and the American Medical Record Association are available to students in their senior year of the program. The Virginia Medical Record Association is sometimes able to provide scholarship funds of up to \$1,400 per year to residents of Virginia. Details are available through the program chairman.

REQUIREMENTS FOR ADMISSION

Students are admitted to the program as juniors and must have completed 60 hours at an accredited college or university. This minimum requirement is to include:

	<i>Semester Hours</i>
Humanities	
English	6
(Composition and Literature)	
Speech	2
Biological Sciences	12
Including a minimum of 5 semester hours of Human Anatomy and Physiology with laboratory	
Arts and Sciences	
College Mathematics or Algebra	3
Economics	2
Psychology	2
Sociology	2
Statistics	3
Electives	24
Total	60

Typing proficiency must also be demonstrated prior to admission to the program.

CURRICULUM

Students in the medical record administration program must satisfactorily complete the following courses:

<i>Junior Year, Fall Semester</i>	<i>Semester Hours</i>
MER 300 Medical Terminology	3
MER 301 Introduction to Records Management	1
PMC 381 Health Science I	4
BUS 321 Organization and Management I	3
HCM 306 Legal and Regulatory Controls in the Health Industry	3
HCM 300 Health Care Organization Services	3
	17

156 School of Allied Health Professions

Spring Semester

PMC 382	Health Science II	3
MER 393	Clinical Practicum I	1
MER 313	Medical Record Science and Administration	3
MER 400	Medical Record Science and Administration II	3
MER 443	Quality Assurance and Medical Care Evaluation	3
BUS 331	Personnel Management	3
		<hr/> 16

Senior year, Summer Session

MER 493	Clinical Practicum II	2.5
	Elective	3
		<hr/> 5.5

Fall Semester

MER 422	Medical Record Science and Administration III	4
HCM 406	Personnel Management in Health Care Facilities	3
HCM 408	Management in Health Care Facilities	3
BUS 260	Information Systems Concepts	3
	Elective	3
		<hr/> 16

Spring Semester

MER 423	Medical Record Science and Administration IV	5
MER 491	Special Topics in Medical Record Administration	3
	Elective	3
HCM 399	Independent Study	2
MER 494	Clinical Practicum III, Management Affiliation	2.5
		<hr/> 15.5

Total..... 70

FACULTY

Associate Professor: Dixon (Chairman)

Assistant Professor: Clark

Adjunct Instructors: Makepeace; Johnson, C.

COURSES OF INSTRUCTION (MER)

300 Medical Terminology. Semester course; 2 lecture and 4 laboratory hours. 3 credits. Study of scientific terminology emphasizing the "language of medicine" through study of etymology, medical records, and scientific readings. Practical application is required in the medical transcription laboratory.

301 Introduction to Records Management. Semester course; 1 lecture hour. 1 credit. History of records management and the methods of securing and processing information.

313 Medical Record Science and Administration. Semester course; 2 lecture and 4 laboratory hours. 3 credits. Prerequisite: MER 300. Introduction to health

records systems, health statistics and standards for development of the medical record.

393 Clinical Practicum. 6 clock hours per week for the last ten weeks of the semester. 1 credit. Prerequisite: MER 301, 313, and HCM 306. Assigned medical record functions under supervision of an accredited record technician or registered record administrator in a health care facility.

400 Medical Record Science and Administration II. Semester course; 2 lecture and 4 laboratory hours. 3 credits. Co-requisite: MER 313. Study of coding and indexing of medical information according to various classification systems; introduction to medical care evaluation.

422 Medical Record Science and Administration III. Semester course; 3 lecture and 4 laboratory hours. 4 credits. Prerequisite: MER 493, BUS 321, and 331. A study of the analysis of systems in medical record departments and record centers. Organization and management concepts applied to the solution of problems in records management, and to the interrelated departments.

423 Medical Record Science and Administration IV. Semester course; 5 seminar hours per week for first 12 weeks of the semester (to allow 4 weeks of full-time practicum at end of semester), 3½ laboratory hours. 5 credits. Prerequisites: MER 422, graduating senior status, and permission of instructor. Required for all graduating seniors. Readings, case studies, and problem solving activities designed to integrate prior learning and experiences and to encourage synthesis. Emphasis is on new trends and changes in medicine, therapy, and administrative approaches in medical records.

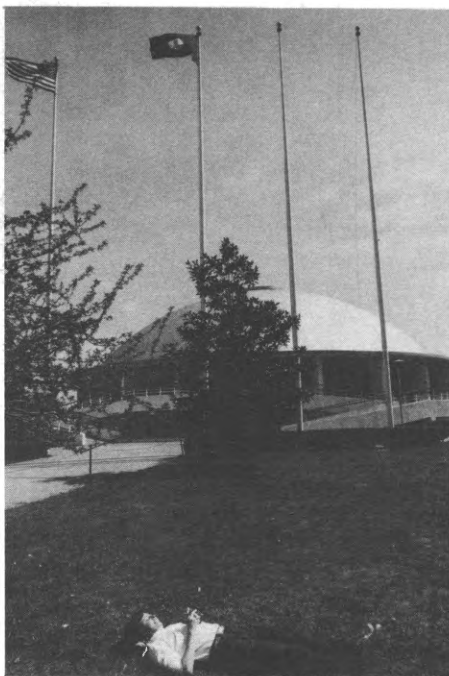
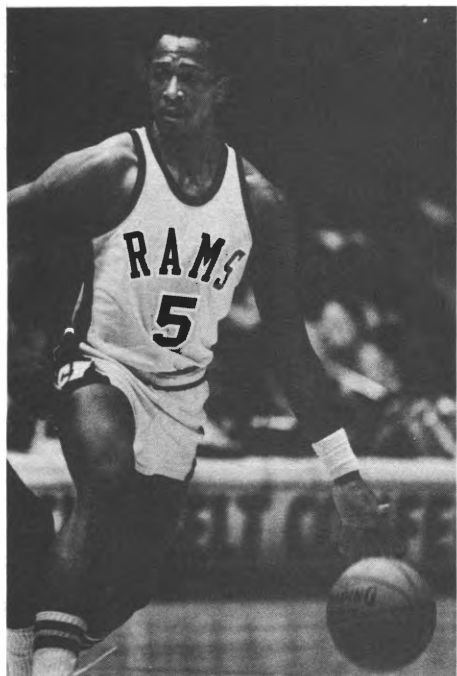
433 Medical Care Evaluation and Quality Assurance. Semester course; 3 lecture hours. 3 credits. Co-requisite: MER 400, or permission of instructor. The intent of the course is to develop the student's understanding of the medical records department's role in the quality assurance process and to introduce skills and techniques for evaluating medical care.

491 Special Topics in Medical Record Administration. Semester course; 3 lecture/discussion hours. 3 credits. Prerequisite: MER 410. Study through lectures, tutorial services, or independent research of selected topics not provided in other courses.

493 Clinical Practicum II. Semester course; 150 clock hours. 2.5 credits. Prerequisite: MER 400. Assigned functions under supervision of a registered record administrator or an accredited record technician in a health care facility.

494 Clinical Practicum III, Management Affiliation. Semester course; 37.5 clock hours per week for 4 consecutive weeks at the end of the semester of graduation. 2.5 credits. Co-requisite: MER 423. Directed practice in assigned administrative functions under the direction of a registered record administrator in an affiliated medical record department. One day during examination week will be assigned for group discussion and evaluation of the practicum.

See *Virginia Commonwealth University Undergraduate Bulletin* for descriptions of the following courses: BUS 260, 321, 331.



PART VIII—Board, Administration, and Faculty

BOARD OF VISITORS Appointed by the Governor of the Commonwealth of Virginia

Daniel T. Balfour, B. A., J. D.
Richmond

Mrs. Fitzgerald Bemiss, B.S.
Richmond

Thomas E. Butt, B.A., D.D.S.
Wytheville

Custis L. Coleman, B.S., M.D.
Richmond

Benjamin W. Cotten, A.B., J.D., M.A.
McLean

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Associate Dean, School of Medicine
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Associate Dean, School of Medicine
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Associate Dean, School of Medicine
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Assistant Dean, School of Medicine
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Assistant Dean, School of Medicine
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Assistant Dean, School of Nursing

Margaret R. Spaulding, B.S., M.S., Ed.D.
Assistant Dean, School of Nursing
C. Eugene White, B.S., J.D.
Assistant Dean, School of Pharmacy
Graham C. Windridge, Pharm. D., Ph.D.
Assistant Dean, School of Pharmacy

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Associate Dean, School of Graduate Studies
Herbert B. Chermiside, B.A., M.A.
Director of Sponsored Programs
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MCV
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Assistant Dean of Student Affairs and
Coordinator, University Housing

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- H. Stephen Moore, Jr., B.S.
Director of Employee Relations
- William A. Robertson, Jr., B.S., M.Ed.
Deputy Director, University Enrollment Services
- Melvin C. Shaffer
Director, Planning and Systems, University Library Services
- Mary B. Sonn, B.A., M.A., Ph.D.
Counseling Staff Psychologist, MCV
- F.W. Taylor III, B.S., M.S.
Director, University Financial Operations
- Thomas L. Tucker, B.S., M.S.
Recruiter-Counselor, Health Careers Opportunity Program, MCV
- W. Loren Williams, B.S., M.A., Ph.D.
Director, Educational Planning and Development Program, MCV
- Richard M. Winant, B.S., M.A., M.S.L.S.
Associate Director, University Library Services

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Director, Nursing Services
- R. Reed Fraley, B.S., M.S.
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Director, Hospital Personnel
- Dewey C. Hickman, A.B., M.B.A.
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- John J. Maher, B.B.A., M.H.A., M.B.A.
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- John J. Marsh, B.S., M.S., M.H.A.
Director, Institutional Systems
- Richard D. Schrock, B.S., M.B.A.
Director, Finance
- Warren W. Koontz, Jr., B.A., M.D.
Associate Dean, Clinical Activities

FACULTY

Faculty listings include appointments made by the Board of Visitors on March 23, 1983.

- Abbey, Louis M. (1971)¹ *Associate Professor of Oral Pathology* A.B., 1963, Earlham College; D.M.D., 1967, M.S., 1971, Tufts University.
- Abbott, David M. (1975) *Associate Professor of General Dentistry* B.S., 1968, Madison College; D.D.S., 1972, University of North Carolina; M.S.D., 1975, University of Minnesota.
- Abbott, Michael A. (1978) *Clinical Instructor in General Dentistry* B.S., 1974, Randolph-Macon College; D.D.S., 1978, Medical College of Virginia of Virginia Commonwealth University.
- Abedi, Esrafil (1977) *Assistant Professor of Otolaryngology, Rhinology, Laryngology* E.C.F.M.G., 1970, Tehran University, Iran.
- Abedi, Shahla (1976) *Associate Professor of Ophthalmology* M.D., 1970, Tehran University, Iran.
- Abernathy, Ted R. (1974) *Clinical Instructor in Pediatrics* B.A., 1964, Virginia Military Institute; M.D., 1970, Medical College of Virginia of Virginia Commonwealth University.
- Aceto, Mario D. (1973) *Associate Professor of Pharmacology and Toxicology* B.S., 1953, Providence College; M.S., 1956, University of Maryland; Ph.D., 1958, University of Connecticut.
- Ackell, Edmund F. (1978) *President of the University and Professor of Oral and Maxillofacial Surgery* B.S. 1949, Holy Cross College; D.M.D., 1953, Tufts College; M.D., 1962, Western Reserve University.
- Adams, Anne C. (1980) *Clinical Instructor in General Dentistry* B.A., 1967, Radford College; M.S., 1975, D.D.S., 1979, Medical College of Virginia of Virginia Commonwealth University.
- Adams, Melissa A. (1977) *Clinical Instructor in Physical Therapy* B.A., 1969, Wheaton College.
- Adams, Randy (1979) *Assistant Clinical Professor of Pedodontics* B.A., 1968, Hampton Institute; D.D.S., 1972, Howard University.
- Adams, Robert Crady, Jr. (1978) *Clinical Instructor in Pharmacy* B.S., 1965, University of Tennessee.
- Adelaar, Robert E. (1976) *Associate Professor of Surgery*, B.S., 1966, B.A., 1967, Lehigh University; M.D., 1970, University of Pennsylvania.

¹Year of first appointment.

- Addington, Jerry A. (1976) *Clinical Instructor in Pedodontics* B.A., 1972, University of Virginia; D.D.S., 1976, Medical College of Virginia of Virginia Commonwealth University.
- Adkins, Julian (1977) *Instructor in Psychiatry* B.A., 1949, Randolph-Macon College; M.S.S.W., 1959, Richmond Professional Institute.
- Adler, Stuart P. (1979) *Assistant Professor of Pediatrics and Microbiology and Immunology* B.A., 1968, M.D., 1971, Johns Hopkins University.
- Agapis, Tony (1982) *Clinical Instructor in Removable Prosthodontics* B.S., 1975, D.D.S., 1976, University of Maryland.
- Aghdami, Aliasghar (1973) *Associate Professor of Anesthesiology* M.D., 1957, Tabriz University, Iran.
- Akers, George R. (1975) *Clinical Instructor in Pharmacy* B.S., 1967, Medical College of Virginia.
- Akroyd, H. Duane (1983) *Assistant Professor of Radiation Sciences* A.A.S., 1968, Broome Community College; B.S., 1970, Medical College of Georgia; M.S., 1975, State University of New York.
- Albright, Frank G. (1983) *Clinical Instructor in Pharmacy* B.S., 1950, George Washington University.
- Alexander, Arthur L. (1983) *Clinical Instructor in General Dentistry* B.S., 1959, University of Miami; D.D.S., 1963, Medical College of Virginia.
- Alexander, John M. (1975) *Associate Professor and Acting Chairman, Department of Oral and Maxillofacial Surgery* D.D.S., 1966, Medical College of Virginia.
- Alford, William L., Jr. (1980) *Instructor in Radiology* B.S., 1972, University of Richmond; M.D., 1976, Medical College of Virginia of Virginia Commonwealth University.
- Ali, M. Moinuddin (1981) *Assistant Professor of Radiology* M.B., B.S., 1966, Gandhi Medical College, India.
- Allen, Donald Keith (1978) *Clinical Instructor in Pharmacy* B.S., 1960, Medical College of Virginia.
- Allen, Robert H. (1980) *Clinical Instructor in Pharmacy* B.S., 1950, Columbia University.
- Allison, Trenton B. (1983) *Assistant Professor of Pharmacy and Pharmaceutics* B.S., 1966, Ph.D., 1972, University of Utah.
- Alpern, Frederick P. (1971) *Clinical Instructor in Pediatrics* B.S., 1962, Columbia University; M.D., 1966, Medical College of Virginia.
- An, Teisa (1976) *Assistant Professor of Pathology* B.S., 1961, M.D., 1965, Osaka University, Japan; Ph.D., 1972, University of Pittsburgh.
- Anderson, Ralph L. (1981) *Assistant Clinical Professor of Orthodontics* B.S., 1960, Virginia State College; D.D.S., 1970, Medical College of Virginia of Virginia Commonwealth University.
- Andrako, John (1956) *Associate Vice-President for Health Sciences and Professor of Pharmaceutical Chemistry* B.S., 1947, M.S., 1949, Rutgers University; Ph.D., 1953, University of North Carolina.
- Andrako, John D. (1978) *Clinical Instructor in Pediatrics* B.S., 1971, University of North Carolina; M.D., 1975, Medical College of Virginia of Virginia Commonwealth University.
- Andrews, Jack Preston (1963) *Assistant Clinical Professor of Pediatrics* M.D., 1957, Medical College of Virginia.
- Ansell, Burness F., Jr. (1967) *Clinical Instructor in Internal Medicine* B.S., 1953, Hampden-Sydney College; M.D., 1957, Medical College of Virginia.
- Anthony, Scott B. (1981) *Clinical Instructor in Surgery* B.S., 1969, Davidson College; M.D., 1974, Washington University.
- Appleberg, Maria (1982) *Instructor in Surgery* M.D., 1974, Medical College of Virginia of Virginia Commonwealth University.
- Archer, Gordon L. (1975) *Associate Professor of Internal Medicine* B.A., 1965, Washington and Lee University; M.D., 1969, University of Virginia.
- Archer, John S., Jr. (1958) *Clinical Instructor in Otolaryngology* B.A., 1940, University of Virginia; M.D., 1943, Medical College of Virginia.
- Arginteanu, Jules (1964) *Professor of Psychiatry* B.A., 1956, Antioch College; M.A., 1960, Ph.D., 1961, State University of Iowa.
- Arkin, David L. (1980) *Assistant Clinical Professor of Pediatrics* B.S., 1969, City College of New York; M.D., 1977, Medical College of Wisconsin.
- Armstrong, Carl W. (1983) *Assistant Clinical Professor of Pathology* A.B., 1971, Kenyon College; M.D., 1975, Case Western Reserve University.
- Armstrong, Richard H. (1972) *Assistant Clinical Professor of Psychiatry* B.S., 1953, Maine Maritime Academy; M.D., 1961, Medical College of Virginia.
- Arnold, Gayle G. (1965) *Clinical Professor of Pediatrics* A.B., 1942, Johns Hopkins University; M.D., 1945, University of Maryland.

- Arnold, Ralph M. (1981) *Assistant Clinical Professor of Periodontics* A.A., 1962, College of Sequoias; D.D.S., 1966, University of California; M.S., 1973, University of Texas.
- Arnold, William V. (1983) *Lecturer in Patient Counseling* B.A., 1963, Southwestern at Memphis; B.D., 1966, Columbia Theological Seminary; Ph.D., 1970, Southern Seminary.
- Arthur, Robert Miller (1965) *Assistant Professor of Internal Medicine* A.B., 1950, University of North Carolina; M.D., 1954, Duke University.
- Ashley, Susan L. (1981) *Instructor in Pharmacy and Pharmaceutics* B.S., 1979, Medical College of Virginia of Virginia Commonwealth University.
- Ashworth, John S. (1964) *Clinical Instructor in Internal Medicine* B.A., 1954, Princeton University; M.D., 1958, Columbia University.
- Astruc, Juan A. (1967) *Professor of Anatomy* M.D., 1957, Ph.D., 1959, University of Granada, Spain.
- Atiyeh, Wasfi A. (1960) *Assistant Clinical Professor of Otolaryngology* B.A., 1948, M.D., 1952, American University of Beirut.
- Atkins, John D. (1980) *Clinical Instructor in Pharmacy* B.A., 1973, Duke University; B.S., 1976, Pharm.D., 1978, Medical College of Virginia of Virginia Commonwealth University.
- Atkinson, Gerald W. (1966) *Clinical Instructor in Neurology* B.A., 1952, Lincoln Memorial University; M.D., 1956, Medical College of Virginia.
- Atri, Padmini B. (1983) *Instructor in Psychiatry* M.B.B.S., 1964, Patna University, India; M.S., 1972, Ranchi University, India.
- Atwill, William H. (1968) *Associate Clinical Professor of Surgery* B.S., 1953, Virginia Military Institute; M.D., 1960, University of Virginia.
- Austein, David H. (1977) *Clinical Instructor in Pediatrics* B.S., 1970, M.D., 1974, Northwestern University.
- Austin, Becky D. (1980) *Clinical Instructor in General Dentistry* B.S., 1974, Medical College of Virginia of Virginia Commonwealth University.
- Austin, Leonard A. (1962) *Assistant Clinical Professor of Pediatrics* B.S., 1953, Richmond Professional Institute; M.D., 1959, Medical College of Virginia.
- Avent, Mitchell A. (1979) *Assistant Clinical Professor of Pedodontics* B.S., 1972, University of Georgia; D.D.S., 1976, Medical College of Virginia of Virginia Commonwealth University.
- Bach, Carole A. (1968) *Associate Professor of Medical-Surgical Nursing* B.S.N., 1966, Indiana University; M.S.N., 1968, Washington University.
- Bahlman, John H., Jr. (1977) *Clinical Instructor in Pharmacy* B.S., 1974, Medical College of Virginia of Virginia Commonwealth University.
- Bailey, Robert L., Jr. (1964) *Clinical Associate in Internal Medicine* B.S., 1933, University of South Carolina; M.D., 1937, University of Virginia.
- Baird, Charles L., Jr. (1981) *Associate Clinical Professor of Anesthesiology* B.S., 1951, University of Richmond; M.D., 1957, Medical College of Virginia.
- Baker, Charles A. (1981) *Clinical Instructor in Pharmacy* B.S., 1972, Medical College of Virginia of Virginia Commonwealth University.
- Ball, John J., III (1982) *Assistant Clinical Professor of Family Practice* B.S., 1972, Michigan State University; M.D., 1976, Medical College of Virginia of Virginia Commonwealth University.
- Balster, Robert L. (1973) *Associate Professor of Pharmacology and Toxicology* B.S., 1966, University of Minnesota; Ph.D., 1970, University of Houston.
- Bampton, Betsy A. (1965) *Associate Professor of Maternal-Child Nursing* A.A., 1957, Frostburg State College; B.S., 1960, Medical College of Virginia; M.S., 1965, University of Maryland.
- Banks, William L., Jr. (1965) *Professor of Biochemistry and Surgery* B.S., 1958, Rutgers University; M.S., 1961, Bucknell University; Ph.D., 1963, Rutgers University.
- Banks-Gould, Maureen (1981) *Clinical Associate in Medical-Surgical Nursing* B.S., 1975, Boston College; M.S., 1978, University of Connecticut.
- Banner, Robert L. (1977) *Associate Clinical Professor of Surgery* B.S., 1948, M.D., 1950, University of Tennessee.
- Barbatti, Carlin A. S. (1981) *Clinical Instructor in Pharmacy* B.S., 1973, St. Louis College of Pharmacy.
- Barker, Thomas C. (1967) *Dean, School of Allied Health Professions, and Professor of Health Administration* B.S., 1954, M.A., 1960, Ph.D., 1963, State University of Iowa.
- Barlow, Gordon K. (1979) *Clinical Instructor in Pharmacy* B.S., 1974, University of Pittsburgh.
- Barnard, W. Calvin (1979) *Clinical Instructor in Restorative Dentistry* B.S., 1973, North Carolina State University; D.D.S., 1977, Medical College of Virginia of Virginia Commonwealth University.
- Barnes, Robert F. (1977) *Assistant Professor of*

- Restorative Dentistry* B.A., 1967, University of Virginia; D.D.S., 1973, Medical College of Virginia of Virginia Commonwealth University.
- Barnes, Robert W. (1977) *Professor of Surgery, Eminent Scholar* M.A., 1958, University of Colorado; M.D., 1961, University of Illinois.
- Barr, John C. (1977) *Clinical Instructor in Patient Counseling* B.S., 1951, Claflin College; M.Div., 1956, University of Maine.
- Barr, William H. (1972) *Professor and Chairman, Department of Pharmacy and Pharmaceutics* B.S., 1960, Pharm.D., 1961, Ph.D., 1966, University of California, San Francisco.
- Barrell, Lorna M. (1982) *Associate Professor and Chairman, Department of Psychiatric-Mental Health Nursing* B.S., 1955, University of Minnesota; M.S., 1970, Ph.D., 1980, University of Illinois.
- Barrett, Charles H. (1980) *Clinical Instructor in Pedodontics* B.A., 1975, University of Virginia; D.D.S., 1979, Medical College of Virginia of Virginia Commonwealth University.
- Barrett, Frances E. (1956) *Assistant Professor of Internal Medicine* M.D., 1949, University of Virginia.
- Barringer, Michael L. (1967) *Clinical Instructor in Pediatrics* B.A., 1952, University of North Carolina; M.D., 1962, Bowman Gray Medical School.
- Barris, Roanne (1981) *Assistant Professor of Occupational Therapy* B.A., 1972, University of Michigan; M.S., 1976, Columbia University.
- Bartolf, Michael M. (1981) *Research Instructor in Biochemistry* B.S., 1968, Villanova University; Ph.D., 1978, Rutgers University.
- Baskerville, Archer L. (1981) *Assistant Clinical Professor of Internal Medicine* B.S., 1969, M.D., 1973, Medical College of Virginia of Virginia Commonwealth University.
- Bassham, H. Lee (1981) *Associate Clinical Professor of Radiology* B.S., 1956, Centenary College of Louisiana; M.D., 1960, Louisiana State University.
- Batchelder, Harold C. (1968) *Associate Professor of Psychiatry* B.A., 1952, Elon College; M.S.S.W., 1960, Richmond Professional Institute.
- Battista, Joseph Victor (1975) *Clinical Instructor in Obstetrics and Gynecology* A.B., 1964, Princeton University; M.D., 1968, Cornell University.
- Baum, Leroy M., Jr. (1979) *Assistant Professor of Restorative Dentistry* A.B., 1951, Catawba College; D.D.S., 1955, Medical College of Virginia.
- Baum, Susan D. (1979) *Instructor in Medical-Surgical Nursing* B.S., 1975, University of Virginia; M.S.N., 1978, University of Pennsylvania.
- Baumgarten, Clive Marc (1979) *Assistant Professor of Physiology and Biophysics* B.A., 1970, Ph.D., 1976, Northwestern University.
- Bayer, Frederick W. (1968) *Clinical Instructor in Rehabilitation Medicine* M.D., 1950, University of Louisville.
- Baylor, Richard N. (1954) *Assistant Clinical Professor of Internal Medicine* M.D., 1946, Medical College of Virginia.
- Beachley, Michael C. (1970) *Professor of Radiology* A.B., 1962, B.M.S., 1963, Dartmouth College; M.D., 1965, Harvard University.
- Beall, John D. (1962) *Associate Clinical Professor of Restorative Dentistry* D.D.S., 1948, Medical College of Virginia.
- Beazley, Wyatt S., III (1969) *Assistant Clinical Professor of Surgery* B.A., 1957, University of Virginia; M.D., 1961, Medical College of Virginia.
- Beck, David A. (1980) *Assistant Professor of Restorative Dentistry* B.S., 1974, University of New Mexico; D.D.S., 1977, Baylor University.
- Beck, Ralph E. (1968) *Associate Clinical Professor of Pathology* A.B., 1954, M.D., 1957, University of Illinois.
- Becker, Donald P. (1971) *Professor of Surgery and Chairman, Division of Neurosurgery* B.A., 1957, Williams College; M.D., 1961, Western Reserve University.
- Becker, Elmore J. (1965) *Assistant Clinical Professor of Internal Medicine* A.B., 1952, Georgetown University; M.D., 1956, University of Virginia.
- Bechard, Daniel E. (1981) *Instructor in Internal Medicine* B.A., 1973, Harpur College; M.D., 1978, State University of New York Upstate.
- Bedinger, Robert W. (1958) *Assistant Clinical Professor of Internal Medicine* M.D., 1948, Medical College of Virginia; B.S., 1968, Virginia Military Institute.
- Beeston, John T., III (1978) *Assistant Professor of Nurse Anesthesia* B.S., 1976, M.A., 1978, University of Minnesota.
- Behm, Frederick G. (1979) *Assistant Professor of Pathology* B.S., 1970, University of Wisconsin; M.D., 1974, Medical College of Wisconsin.
- Beirne, Edward B., Jr. (1981) *Assistant Clinical Professor of Family Practice* B.A., 1962, Virginia Military Institute; M.D., 1966, Medical College of Virginia.
- Belgrad, Richard (1975) *Associate Professor of Radiology* B.S., 1952, Loyola College; M.D., 1956, University of Maryland.
- Bell, Bertha R. (1974) *Assistant Professor of*

- Community Health Nursing* B.S., 1957, St. Joseph College; M.S., 1960, Boston College; M.S., 1971, University of Maryland.
- Bell, Dewey H. Jr. (1952) *Professor and Chairman, Department of Removable Prosthodontics* B.S., 1948, Wofford College; D.D.S., 1952, Medical College of Virginia.
- Bell, Sandra A. (1981) *Clinical Instructor in Pediatrics* B.S., 1972, Virginia State University; M.D., 1978, Medical College of Virginia of Virginia Commonwealth University.
- Belt, Douglas S. (1978) *Clinical Instructor in Restorative Dentistry* B.S., 1970, University of Richmond; D.D.S., 1974, Medical College of Virginia of Virginia Commonwealth University.
- Bennett, Emily C. (1976) *Assistant Professor of Obstetrics and Gynecology* B.S., 1972, M.S., 1976, Medical College of Virginia of Virginia Commonwealth University.
- Bennett, William J. (1977) *Assistant Clinical Professor of Pedodontics* B.S., 1971, Wake Forest University; D.D.S., 1975, University of Maryland.
- Bentley, Jack K. (1981) *Clinical Instructor in Radiology* B.S., 1952, Emory and Henry College; M.D., 1956, University of Virginia.
- Berger, George P. (1982) *Clinical Instructor in General Dentistry* D.D.S., 1964, Medical College of Virginia.
- Berman, Wallace F. (1977) *Associate Professor of Pediatrics* B.S., 1967, M.D., 1969, University of Minnesota.
- Bernart, William F. (1968) *Associate Clinical Professor of Internal Medicine* A.B., 1950, Princeton University; M.D., 1954, Columbia University.
- Bernd, David L. (1982) *Lecturer in Health Administration* B.A., 1971, College of William and Mary; M.H.A., 1973, Medical College of Virginia of Virginia Commonwealth University.
- Bernhard, Elizabeth A. (1983) *Clinical Instructor in Dental Hygiene* B.S., 1971, Columbus College; D.M.D., 1975, Medical College of Georgia.
- Berry, Katherine N. (1982) *Clinical Associate in Psychiatric-Mental Health Nursing* B.S.N., 1976, University of Virginia; M.S., 1980, Medical College of Virginia of Virginia Commonwealth University.
- Berryman, Richard M. (1975) *Clinical Instructor in Pharmacy* B.S., 1963, Medical College of Virginia.
- Beyer, James C. (1980) *Lecturer in Legal Medicine* B.S., 1940, St. Ambrose College; M.D., 1946, M.S., 1950, Loyola University.
- Bhatnagar, Ajay S. (1968) *Assistant Professor of Obstetrics and Gynecology and Biochemistry* B.A., 1963, M.A., 1967, University of Cambridge, England; Ph.D., 1967, University of Basel, Switzerland.
- Biber, Margaret C. (1975) *Associate Professor of Physiology and Biophysics* B.Sc., 1964, University College, London; D.Phil., 1967, Oxford University, England.
- Biber, Thomas U. L. (1975) *Professor of Physiology and Biophysics* M.D., 1956, University of Bern, Switzerland.
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- Ray, Edward S. *Professor of Medicine* A.B., 1932, Randolph-Macon College; M.D., 1936, University of Virginia.
- Reid, J. Douglas *Professor of Microbiology* Ph.B., 1928, Brown University; Sc.D., 1931, Johns Hopkins University.
- Rothberg, Simon, *Professor of Dermatology and Biochemistry* B.S., 1948, Columbia University; M.S., Ph.D., 1956, Georgetown University.
- Shamburger, Lacy L. *Assistant Clinical Professor of Obstetrics and Gynecology* M.D., 1932, Medical College of Virginia.
- Smith, J. Doyle, *Professor of Pharmaceutical Chemistry* B.S., 1942, M.S., 1944, Ph.D., 1946, University of Virginia.
- Stone, James B. *Clinical Professor of Pediatrics* M.D., 1919, University of Virginia.
- Thompson, W. Taliaferro Jr., *Professor of Medicine* A.B., 1934, Davidson College; M.D., 1938, Medical College of Virginia.
- Tucker, James T. *Clinical Professor of Orthopedic Surgery* M.D., 1926, Medical College of Virginia.
- Warthen, Harry J. *Associate Professor of Surgery* M.D., 1925, University of Virginia.
- Watts, Daniel T. *Professor of Pharmacology and Dean, School of Basic Sciences* B.S., 1937, Elon College; Ph.D., 1942, Duke University.
- Weaver, Warren E. *Professor of Pharmaceutical Chemistry and Dean, School of Pharmacy* B.S., 1942, Ph.D., 1947, University of Maryland.
- Yingling, Doris B. *Professor of Nursing and Dean, School of Nursing* B.S., 1944, University of Oregon; M.A., 1951, Ed.D., 1956, University of Maryland.
- Young, Nelson F. *Professor of Pathology* B.S., 1935, University of Washington; Ph.D., 1945, New York University.

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PRIVACY RIGHTS OF PARENTS AND STUDENTS

Provisions for the release of information concerning students, including the rights of access by students and others to education records maintained by Virginia Commonwealth University, are as follows:

A. Release of Personally Identifiable Student Information

It is the policy of Virginia Commonwealth University that "personally identifiable information," other than "directory information" from a student's education records, will not be disclosed, without the written consent of the affected student, to any party or organization which does not have a legitimate right of access to the information. The persons or organizations which are deemed to have legitimate rights of access are:

1. Virginia Commonwealth University officials and staff, and university academic excellence and honor societies, fraternities, and sororities which have a designated faculty advisor. Requests from such officials or organizations shall be directed to the appropriate office and proper identification will be required. Access will not be granted unless it is determined that the person or organization is deemed to have a legitimate educational interest, which is defined as having some reasonable relationship to instruction, supervision, administration, or other similar responsibility of this university.
2. Appropriate persons in connection with a student's application for or receipt of financial aid.
3. Appropriate federal or state education authorities.
4. Organizations conducting studies for, or on behalf of, Virginia Commonwealth University, for the purpose of assisting the university in the accomplishment of its stated mission and purpose; provided, however, that such information will be used only by such organizations and will be destroyed when no longer needed for the intended purpose. The university registrar or the assistant university registrar must approve requests of this nature.
5. Accrediting organizations.
6. Parents of a dependent student, as defined in Section 152 of the Internal Revenue Code. (Note: Husbands and wives are not entitled to obtain records of their spouses without the consent of the spouse, regardless of dependency.)
7. In compliance with judicial order or subpoena, after the university has made a reasonable effort to notify the student.
8. Appropriate persons in connection with an emergency if such knowledge is necessary to protect the health or safety of a student or other persons.

NOTE: Custodians of student records will maintain a record of all individuals and agencies which have requested or obtained access to a student's record (except those listed in A(1)

and (6) above). This record will specifically indicate the legitimate interest that the person or agency had in obtaining the information, and the information made available will be limited to that necessary to satisfy such demonstrated needs. In addition, custodians will, prior to the release of "personally identifiable information" from a student's record, obtain assurances that the information will be used only for the purpose for which the original disclosure is made and that there will be no further disclosure without the student's consent.

B. Definitions:

1. **Education Records.** "Education records" are defined as those records, files, documents, and other materials which (1) contain information directly related to a student; and (2) are maintained by Virginia Commonwealth University or by a person acting for the university. They do *not* include (1) personal notes and other such information which is in the sole possession of the maker and which is not accessible or revealed to any other individual; (2) records available only to law enforcement personnel; (3) employment records; (4) medical, psychological, and psychiatric records which are disclosed only to individuals providing treatment and which can be made accessible to the student's personal physician or other appropriate person of the student's choice; or (5) information collected on a person who is no longer a student at Virginia Commonwealth University and which pertains to activities or accomplishments that occurred after the person ceased to be a student at VCU (e.g., records of the accomplishment of alumni). A list of education records maintained by the university and the location thereof is available in the Office of the University Registrar.
2. **Student.** A "student" is any person who is or has been enrolled at Virginia Commonwealth University, and with respect to whom education records are maintained by the university, and includes a parent of a "dependent student," as defined in Section 152 of the Internal Revenue Code.
3. **Directory Information.** "Directory information" includes the following: a student's name, mailing address and telephone number, local address and telephone number, semesters of attendance, load status (full- or part-time), date of admission, date of graduation, school, major and minor fields of study, whether or not currently enrolled, classification (freshman, sophomore, etc.), type of degree being pursued, honors, awards, degree received, weight and height of members of athletic teams, and whether the student has participated in officially recognized activities and sports sponsored by the university. At the time of registration, and not later than 14 days after the beginning of a term, the student may submit to the Academic Records Office a written request that directory information pertaining to that student not be released. This request is effective only for the one semester and must be

renewed at the beginning of each academic term.

4. *Access.* Access to an education record signifies the right to inspect one's records and includes the right to obtain copies of that record.

C. Procedure for Gaining Access to Education Records

To obtain access to one's records, a student must advise the custodian of the records of his or her desire to examine such records. If desired, the student may also request an explanation and/or copies of such records. A reasonable fee will be charged for copies provided. Examination will be permitted under conditions which will prevent alteration or mutilation of the record. A student must present proper identification upon the request of the custodian of the records.

If the student believes the record content to be inaccurate, he or she may submit a request to amend the record. Normally, such matters will be satisfactorily resolved in the course of informal discussions with the student. When agreement cannot be reached, a written challenge as to the accuracy of the record may be presented to the record custodian, who will provide a response to the student within a period of 45 days. If the student's request is not granted, the student will also be advised of his or her right to a hearing. The student may then submit a written request for a hearing to the dean of student life, who will refer the matter to the University Hearing Board. The normal procedures established for the Hearing Board will govern such appeals. If the appeal is denied, the student may submit to the University Hearing Board a written explanation to be inserted into the record.

NOTE: This procedure does not provide for a hearing to contest an academic grade.

D. Limitations on Rights of Access

A student is not entitled access to:

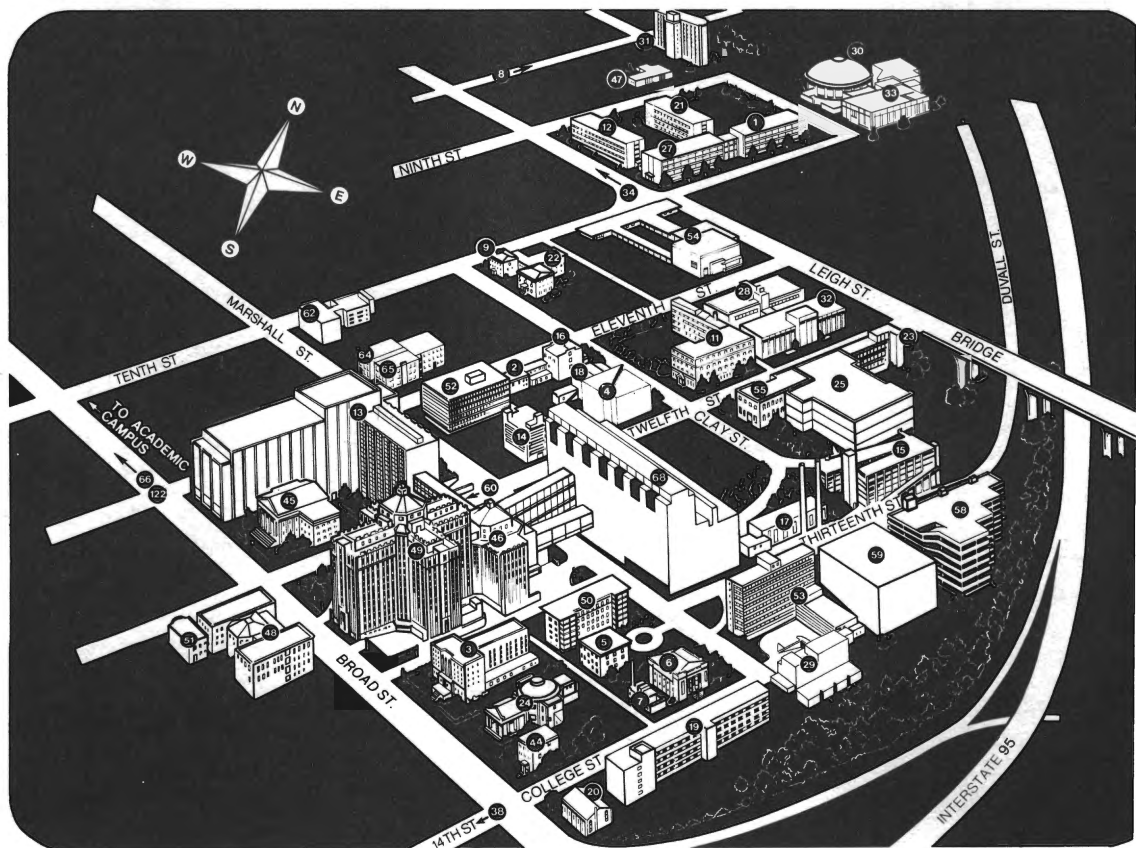
1. Financial records of parents or any information therein.
 2. Confidential letters and statements of recommendation which were placed in the education records prior to January 1, 1975, as well as those received subsequent to that date when the student has specifically waived, in writing, his or her right to examine or review said letter(s) or statement(s).
 3. Medical and/or psychiatric records, when the attending physician has made a part of the record a written statement that in his or her opinion, the review of the records by the person who is the subject of the record would not be in the best interests of said person.
- E.** The university retains all rights to the student's academic record and may withhold transcripts of the record because of unfulfilled obligations to the university.
- F.** These guidelines are promulgated pursuant to Section 438, Pub. L. 90-247, Title IV, as amended, 88 stat. 571-574 (20 U.S.C. §1232g); and the regulations promulgated by the Secretary of Health, Education, and Welfare as published in the *Federal Register* on Thursday, June 17, 1976. A student who feels that the university has failed to comply with applicable regulations is entitled to file a complaint with the Secretary of Health, Education, and Welfare.

de Building

- 1 Bear Hall, 10th & Leigh St.
- 2 Personnel Annex Building, 411 N. 11th St.
- 3 Nursing Education Building, 1220 E. Broad St.
- 4 Pharmacy/Pharmacology Building, 410 N. 12th St.
- 5 Dooley Building, 1225 E. Marshall St.
- 6 Egyptian Building, 1223 E. Marshall St.
- 7 Pathological Incinerator, 316 College St.
- 8 Physical Plant Shops Building, 659 N. 8th St.
- 9 Leigh House, 1000 E. Clay St.
- 11 McGuire Hall, 1112 E. Clay St.
- 12 McRae Hall, 10th & Leigh St.
- 13 Sanger Hall, 1101 E. Marshall St.
- 14 Ambulatory Care Center, 408 N. 12th St.
- 15 MCV/VCU Visitor Parking Deck, 1220 E. Clay St.
- 16 University Personnel Employment Office, 1101 E. Clay St.
- 17 Central Heating & Power Plant, 400 N. 13th St.
- 18 MCV Alumni Building, 1105 E. Clay St.
- 19 Randolph Minor Hall, 307-15 College St.
- 20 Randolph Minor Annex, 301 College St.

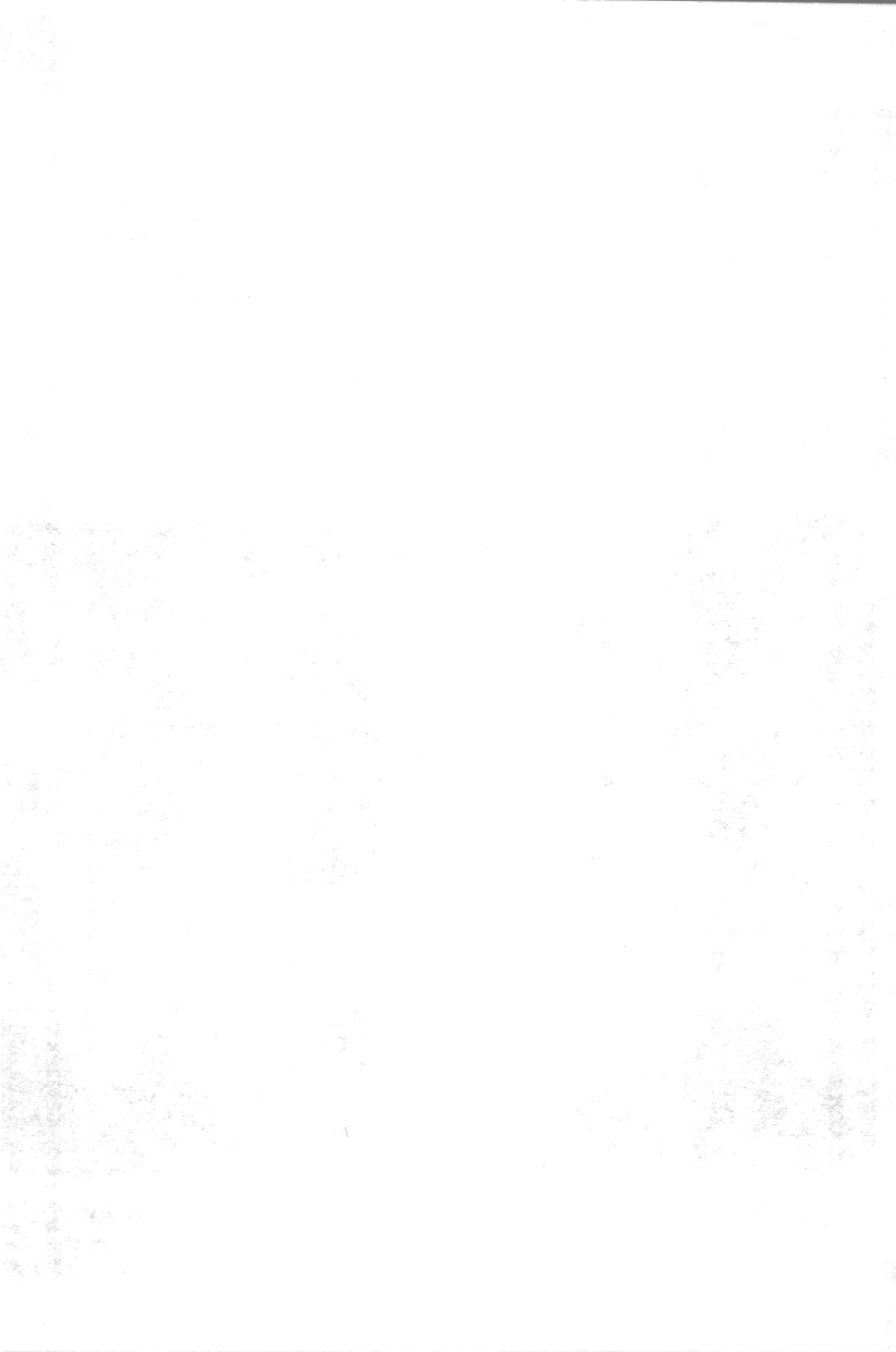
- 21 Rudd Hall, 10th & Leigh St.
- 22 Sheltering Arms, 1008 E. Clay St.
- 23 Strauss Research Laboratory, 527 N. 12th St.
- 24 Monumental Church, 1224 E. Broad St.
- 25 Tompkins-McCaw Library, 509 N. 12th St.
- 26 Toxicology Laboratory & Rodent House, 9 N. 13th St.
- 27 Warner Hall, 10th & Leigh St.
- 28 Wood Memorial Building, 521 N. 11th St.
- 29 Cancer Center, E. Marshall & College St.
- 30 Larrick Student Center, 641 N. 8th St.
- 31 Cabaniss Hall, 600 N. 8th St.
- 32 Lyons Dental Building, 520 N. 12th St.
- 33 Gymnasium, 9th & Leigh St.
- 34 Animal Research Facility, Hanover County
- 38 Consolidated Lab Building, 9 N. 14th St.
- 44 Newton House, College & Broad St.
- 45 Old Student Center, 323 Broad St.
- 46 A.D. Williams Memorial Clinic, 1201 E. Marshall St.
- 47 VCU Day Nursery, 610 N. 9th St.
- 48 South Hospital, 1201 E. Broad St.

- 49 West Hospital, 1200 E. Broad St.
- 50 East Hospital, 1215 E. Marshall St.
- 51 Lewis House, 223 Governor St.
- 52 Nelson Clinic, 401-09 N. 11th St.
- 53 North Hospital, 1300 E. Marshall St.
- 54 Virginia Treatment Center, 515 N. 10th St.
- 55 Richmond Academy of Medicine, 1200 E. Clay St.
- 58 Faculty - Staff Parking Deck (Lot D), 515 N. 13th St.
- 59 MCV Hospital Supply & Distribution Building, 403 N. 13th St.
- 60 George Ben Johnston Auditorium, 305 N. 12th St.
- 62 VMI Building, 1000 E. Marshall St.
- 64 Samuel Putney House, 1010 E. Marshall St.
- 65 Stephen Putney House, 1012 E. Marshall St.
- 66 Holiday Inn, 301 W. Franklin St.
- 68 New MCV Hospital, 1200 E. Marshall St.
- 122 Richmond Plaza Building, 111 S. 7th St.



Medical College
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Campus Locator





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